

 Atkins trial pit (2009-2011)  
 URS historical borehole (pre 2004)  
 Historical trialpit (pre 2004)  
 Visible ash and clinker recorded on Exploratory Hole Logs  
 Anticipated Extent of Excavations  
 Preliminary Phase of Residential Housing as covered under Atkins Report , 5041216/REM/RPT/431 & 5041216/REM/RPT/576  
 Middle Terrace Boundary  
 Upper Terrace Boundary  
 Proposed residential area boundaries taken from Barton Willmore `Composite Sketch Layout Phase 1A & 1B` dated 08.08.11 rev.A

***Atkins Limited***

|                                                                                               |                                                                                                            |
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CLIENT



PROJECT  
Coed Darcy Urban Village  
Middle and Upper Terrace

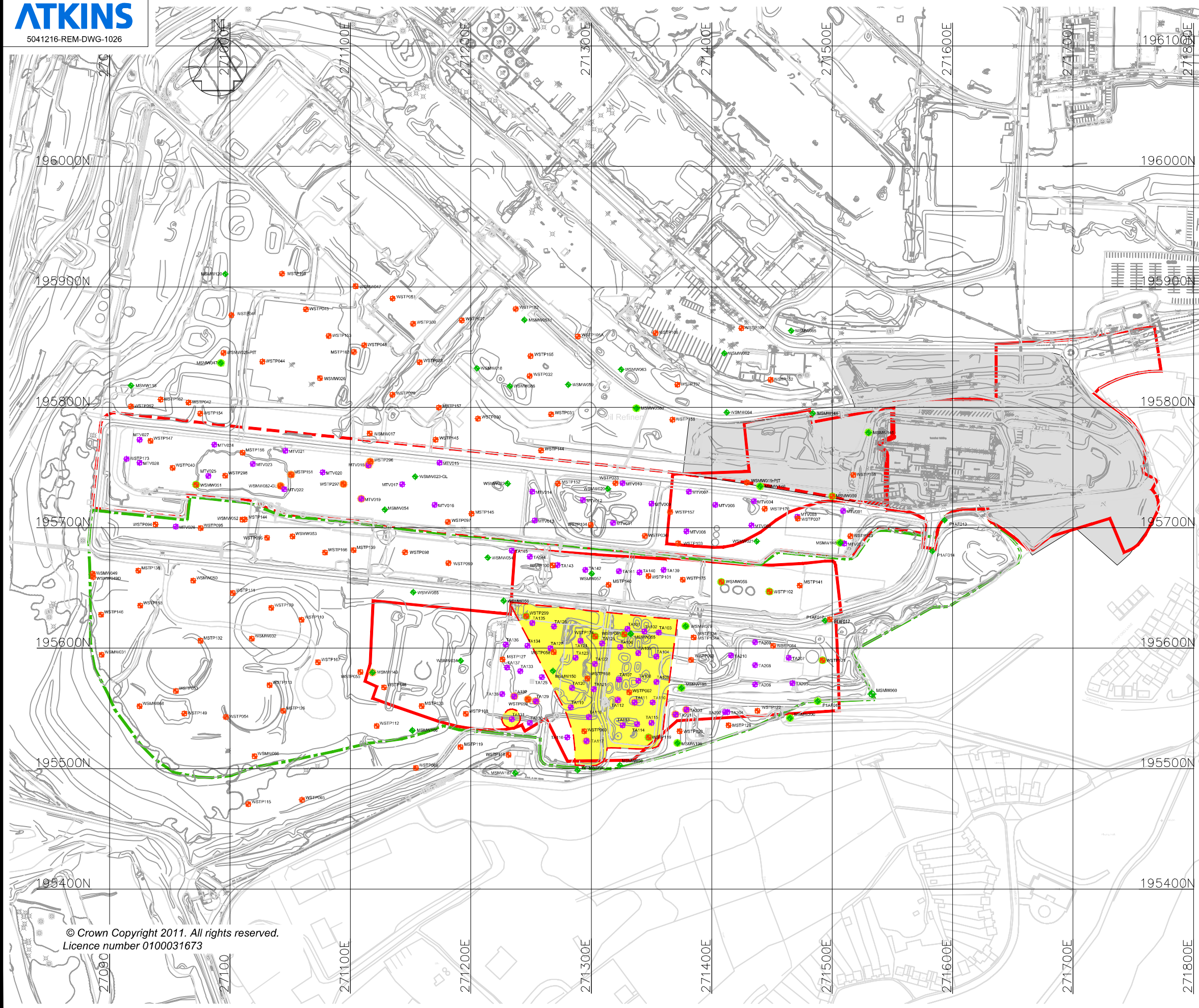
**DRAWING TITLE**

### Anticipated Extent of Excavations - Shallow Ash and Clinker

|   |             |                       |
|---|-------------|-----------------------|
| 0 | SHEET<br>A3 | PLOT DATE<br>23.08.11 |
|---|-------------|-----------------------|

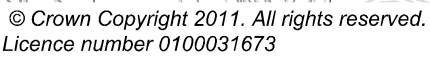
DRAWING NO  
5041216-REM-DWG-1025

|     |   |
|-----|---|
| REV | - |
|-----|---|



- Key**
- Atkins trial pit (2009-2011)
  - URS historical borehole (pre 2004)
  - Historical trialpit (pre 2004)
  - VO>3 Recorded on Exploratory Hole Log
  - Anticipated Extent of Excavations
  - Preliminary Phase of Residential Housing as covered under Atkins Report , 5041216/REM/RPT/431 & 5041216/REM/RPT/576
  - Middle Terrace Boundary
  - Upper Terrace Boundary
  - Proposed residential area boundaries taken from Barton Willmore 'Composite Sketch Layout Phase 1A & 1B' dated 08.08.11 rev.A

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |          |          |                      |      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|----------|----------------------|------|
| REVISIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |          | Drawn By | Checked By           | Date |
| PURPOSE OF ISSUE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          | Rev.     | Authorised for issue | Date |
| <p><b>Atkins Limited</b></p> <p><b>Telford Office</b><br/>                     Cornerstone House<br/>                     Stafford Park 13<br/>                     Telford TF3 3AZ<br/>                     Tel 01952 201234<br/>                     Fax 01952 200981</p> <p><b>Birmingham Office</b><br/>                     The Axis, 10 Holliday Street<br/>                     Birmingham<br/>                     West Midlands B1 1TF<br/>                     Tel 0121 483 5000<br/>                     Fax 0121 483 5252</p> <p>©</p> <p>THIS DRAWING IS NOT TO BE SCALED</p> |          |          |                      |      |
| <p>CLIENT</p> <p><b>ST.MODWEN</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |          |                      |      |
| <p>PROJECT</p> <p>Coed Darcy Urban Village<br/>                     Middle and Upper Terrace</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |          |          |                      |      |
| <p>DRAWING TITLE</p> <p>Anticipated Extent of Excavations<br/>                     Oil Saturated &amp; Hydrocarbon Impacted Soils</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                      |          |          |                      |      |
| SCALES                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | DRAWN    | CHECKED  | CO-ORD CHECK         |      |
| N.T.S.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | BS       | ML       |                      |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | DATE     | DATE     | DATE                 |      |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Aug. '11 | Aug. '11 |                      |      |
| DRAWING NO                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |          | SHEET    | PLOT DATE            |      |
| 5041216-REM-DWG-1026                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |          | A3       | 22.08.11             |      |
| REV                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |          |          |                      | -    |



 Atkins trial pit (2009-2011)  
 URS historical borehole (pre 2004)  
 Historical trialpit (pre 2004)  
 Geotechnically unsuitable materials identified on the Exploratory Hole Log  
 Potential asbestos containing materials  
 Preliminary Phase of Residential Housing as covered under Atkins Report , 5041216/REM/RPT/431 & 5041216/REM/RPT/576  
 Middle Terrace Boundary  
 Upper Terrace Boundary  
 Proposed residential area boundaries taken from Barton Willmore 'Composite Sketch Layout Phase 1A & 1B' dated 08.08.11 rev.A

|                  |      |                         |      |
|------------------|------|-------------------------|------|
| PURPOSE OF ISSUE | Rev. | Authorised<br>for issue | Date |
|------------------|------|-------------------------|------|

|                   |              |   |                             |               |
|-------------------|--------------|---|-----------------------------|---------------|
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| Cornerstone House |              |   | The Axis, 10 Holiday Street |               |
| Stafford Park 13  |              |   | Birmingham                  |               |
| Telford TF3 3AZ   |              |   | West Midlands B1 1TF        |               |
| Tel               | 01952 201234 | © | Fax                         | 0121 483 5000 |
| Fax               | 01952 200981 |   | Tel                         | 0121 483 5252 |

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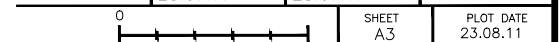


PROJECT  
Coed Darcy Urban Village  
Middle and Upper Terrace

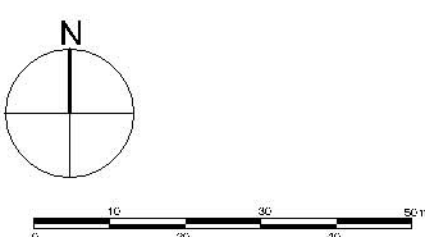
DRAWING TITLE

### Geotechnically Unsuitable Materials

|                  |                  |                  |              |
|------------------|------------------|------------------|--------------|
| SCALES<br>N.T.S. | DRAWN<br>MJ      | CHECKED<br>AM    | CO-ORD CHECK |
|                  | DATE<br>28.07.11 | DATE<br>28.07.11 | DATE         |



|                      |     |
|----------------------|-----|
| DRAWING NO           | REV |
| 5041216-REM-DWG-1024 | -   |



Project  
Coed Darcy Urban Village  
Llandarcy  
Drawing Title  
Composite Sketch Layout  
Phase 1A and 1B  
Date  
21.07.11  
Scale  
1:1000 @ A0  
Project No  
20013  
Drawn by  
JTO  
Check by  
DR  
Revision  
-

## Appendix A



Photograph 1: Aerial photograph taken in the 1970s



Photograph 2: Obstruction and hardstanding clearance of the upper terrace in 2009



Photograph 3: Eastern end of the Upper Terrace



Photograph 4: Pipeline removal from the Cooling towers area 2008



Photograph 5: Middle Terrace obstruction removal in 2011. Exposed rock face evident on the left.

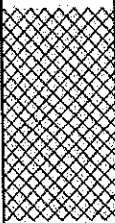


Photograph 6: Validation pitting on the upper terrace in 2009



Photograph 7: Validation pitting on the middle terrace in 2011

## Appendix B i

| BOREHOLE CONSTRUCTION                                                             | SAMPLE                  |                                                                                   | SOIL VAPOUR (ppm) | GROUNDWATER | DEPTH (m)                                           | GEOLOGY                                                                           | BOREHOLE NUMBER: WSMW031 (PIT)                                                                                                   |               | PAGE 1 of 1            |  |
|-----------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|-------------------|-------------|-----------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|---------------|------------------------|--|
|                                                                                   | NUMBER                  | TYPE                                                                              |                   |             |                                                     |                                                                                   | DRILLING DATES: 10/11/03                                                                                                         |               | DRILLING METHODS : JCB |  |
|                                                                                   |                         |                                                                                   |                   |             |                                                     |                                                                                   | DRILLER : JCB                                                                                                                    |               | BOREHOLE DIAMETER : -  |  |
|                                                                                   |                         |                                                                                   |                   |             |                                                     |                                                                                   | LOGGED BY : SS                                                                                                                   |               | SCREEN TYPE & DIAM: -  |  |
|                                                                                   |                         |                                                                                   |                   |             |                                                     |                                                                                   | CHECKED BY : SG                                                                                                                  |               | SCREEN SLOT SIZE: -    |  |
| DESCRIPTION                                                                       |                         | COMMENTS                                                                          | S,V               |             |                                                     |                                                                                   |                                                                                                                                  |               |                        |  |
|  | WSMW031<br>- 0.2m (S,L) |  | *2.1              | *1.6        | 0.0                                                 |  | Loose, dark brown, gravelly silt with abundant rootlets. (MADE GROUND)                                                           | Damp. NVO     | 0,0                    |  |
|                                                                                   |                         |                                                                                   |                   |             | 0.5                                                 |                                                                                   | Loose, dark brown, slightly silty gravel matrix within abundant, flaggy sandstone cobbles and rare black coal/ash. (MADE GROUND) | Damp-wet. NVO |                        |  |
|                                                                                   |                         |                                                                                   |                   |             | 0.7                                                 |                                                                                   | Soft, red-brown, slightly silty clay (in western end of pit).                                                                    | Damp-wet. NVO |                        |  |
|                                                                                   |                         |                                                                                   |                   |             | 1.0                                                 |                                                                                   | With broken weathered SANDSTONE cobbles from 0.7m                                                                                |               |                        |  |
|                                                                                   |                         |                                                                                   |                   |             | Trial pit terminated at 0.9m at refusal on bedrock. |                                                                                   |                                                                                                                                  |               |                        |  |
|                                                                                   |                         |                                                                                   |                   |             | 1.5                                                 |                                                                                   |                                                                                                                                  |               |                        |  |
|                                                                                   |                         |                                                                                   |                   |             | 2.0                                                 |                                                                                   |                                                                                                                                  |               |                        |  |
|                                                                                   |                         |                                                                                   |                   |             | 2.5                                                 |                                                                                   |                                                                                                                                  |               |                        |  |
|                                                                                   |                         |                                                                                   |                   |             | 3.0                                                 |                                                                                   |                                                                                                                                  |               |                        |  |
|                                                                                   |                         |                                                                                   |                   |             | 3.5                                                 |                                                                                   |                                                                                                                                  |               |                        |  |
|                                                                                   |                         |                                                                                   |                   |             | 4.0                                                 |                                                                                   |                                                                                                                                  |               |                        |  |
|                                                                                   |                         |                                                                                   |                   |             | 4.5                                                 |                                                                                   |                                                                                                                                  |               |                        |  |
|                                                                                   |                         |                                                                                   |                   |             | 5.0                                                 |                                                                                   |                                                                                                                                  |               |                        |  |

**LOCATION / NOTES:**

NVO = No visual or olfactory evidence of contamination

S,V = Contamination Observations

S - Odour score (0-5)

V - Visual score (0-5)

**LEGEND**

-  Disturbed Sample
-  Undisturbed Sample
-  Headspace Analysis
-  Down Borehole Analysis
-  Groundwater Table
-  Perched Water Table

**BOREHOLE LOG**

Job Title: BP Llandarcy Whole Site Investigation

Location: BP Llandarcy Refinery

Client: BP/ANDA

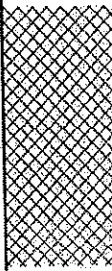


|                 |                       |
|-----------------|-----------------------|
| App'd:          | Date: November 2003   |
| Drawn : SS      | Ref:                  |
| Scale: As scale | Job No: 39991-044-785 |
| Dwg. Size: A4   | BOREHOLE LOG          |

| BOREHOLE<br>CONSTRUCTION                                                          | SAMPLE                 |      | SOIL VAPOUR (ppm) | GROUNDWATER    | DEPTH (m) | GEOLOGY                                                                           | BOREHOLE NUMBER: WSMW055 (PIT)                                                                                                                                                                                        |          | PAGE 1 of 1           |  |
|-----------------------------------------------------------------------------------|------------------------|------|-------------------|----------------|-----------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|-----------------------|--|
|                                                                                   | NUMBER                 | TYPE |                   |                |           |                                                                                   | DRILLING DATES: 18/11/03                                                                                                                                                                                              |          | DRILLING METHODS: JCB |  |
|                                                                                   |                        |      |                   |                |           |                                                                                   | DRILLER: JCB - Leighton                                                                                                                                                                                               |          | BOREHOLE DIAMETER: -  |  |
|                                                                                   |                        |      |                   |                |           |                                                                                   | LOGGED BY: OG                                                                                                                                                                                                         |          | SCREEN TYPE & DIAM: - |  |
|                                                                                   |                        |      |                   | CHECKED BY: SG |           | SCREEN SLOT SIZE: -                                                               |                                                                                                                                                                                                                       |          |                       |  |
|                                                                                   |                        |      |                   |                |           |                                                                                   | DESCRIPTION                                                                                                                                                                                                           | COMMENTS | S,V                   |  |
|  | WSMW055-0.7M (S,L,2xP) |      | *2.8              |                | 0.0       |  | Loose, dark brown, with occasional pockets of black, fine-coarse silty sand. Frequent angular to sub-angular gravel and cobbles. Occasional brick fragments and gravel size slag. (MADE GROUND)                       | Damp     | 0,0                   |  |
|                                                                                   |                        |      |                   | 0.5            |           |                                                                                   | As above with boulder size concrete, frequent whole and broken bricks, occasional pieces of fibrous material and frequent rootlets. (MADE GROUND)                                                                     | Damp     | 1,0                   |  |
|                                                                                   | WSMW055-1.1M (S,L)     |      | *1.6              | 1.0            |           |                                                                                   | Loose, yellow to orange, slightly silty, fine-coarse SAND with occasional pockets of black staining. Frequent sub-angular gravel to cobbles with pockets of soft light brown clayey silt with occasional coarse sand. | Damp     | 2,3                   |  |
|                                                                                   |                        |      |                   | 1.5            |           |                                                                                   | Soft, light brown clayey SILT with occasional coarse sand and angular cobbles.                                                                                                                                        |          | 2,0                   |  |
|                                                                                   |                        |      | *4.9              |                | 2.0       |                                                                                   | Trial pit terminated at 1.8m due to refusal.                                                                                                                                                                          |          |                       |  |
|                                                                                   |                        |      |                   |                | 2.5       |                                                                                   |                                                                                                                                                                                                                       |          |                       |  |
|                                                                                   |                        |      |                   |                | 3.0       |                                                                                   |                                                                                                                                                                                                                       |          |                       |  |
|                                                                                   |                        |      |                   |                | 3.5       |                                                                                   |                                                                                                                                                                                                                       |          |                       |  |
|                                                                                   |                        |      |                   |                | 4.0       |                                                                                   |                                                                                                                                                                                                                       |          |                       |  |
|                                                                                   |                        |      |                   |                | 4.5       |                                                                                   |                                                                                                                                                                                                                       |          |                       |  |
|                                                                                   |                        |      |                   |                | 5.0       |                                                                                   |                                                                                                                                                                                                                       |          |                       |  |

| LOCATION / NOTES:                                      | LEGEND                                                                                                     | BOREHOLE LOG                                     |                       |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------|
| NVO = No visual or olfactory evidence of contamination |  Disturbed Sample       | Job Title: BP Llandarcy Whole Site Investigation |                       |
| S,V = Contamination Observations                       |  Undisturbed Sample     | Location: BP Llandarcy Refinery                  |                       |
| S - Odour score (0-5)                                  |  Headspace Analysis     | Client: BP/WDA                                   |                       |
| V - Visual score (0-5)                                 |  Down Borehole Analysis | App'd:                                           | Date: November 2003   |
|                                                        |  Groundwater Table      | Drawn: OG                                        | Ref:                  |
|                                                        |  Perched Water Table    | Scale: As scale                                  | Job No: 39991-044-785 |
|                                                        |                                                                                                            | Drg. Size: A4                                    | BOREHOLE LOG          |

| BOREHOLE<br>CONSTRUCTION                                                          | SAMPLE                       |                                                                                   | SOIL VAPOUR (ppm) | GROUNDWATER    | DEPTH (m) | GEOLOGY                                                                           | BOREHOLE NUMBER: WSMW032 (PIT)                                                                                                                                                            |                                              | PAGE 1 of 1           |  |
|-----------------------------------------------------------------------------------|------------------------------|-----------------------------------------------------------------------------------|-------------------|----------------|-----------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|-----------------------|--|
|                                                                                   | NUMBER                       | TYPE                                                                              |                   |                |           |                                                                                   | DRILLING DATES: 6/11/03                                                                                                                                                                   |                                              | DRILLING METHODS: JCB |  |
|                                                                                   |                              |                                                                                   |                   |                |           |                                                                                   | DRILLER: JCB                                                                                                                                                                              |                                              | BOREHOLE DIAMETER: -  |  |
|                                                                                   |                              |                                                                                   |                   |                |           |                                                                                   | LOGGED BY: OG                                                                                                                                                                             |                                              | SCREEN TYPE & DIAM: - |  |
|                                                                                   |                              |                                                                                   |                   | CHECKED BY: SG |           | SCREEN SLOT SIZE: -                                                               |                                                                                                                                                                                           |                                              |                       |  |
|                                                                                   |                              |                                                                                   |                   |                |           | DESCRIPTION                                                                       |                                                                                                                                                                                           | COMMENTS                                     | S,V                   |  |
|  | WSMW032 - 0.3m (S,L,2x, PSD) |  | *1.6              |                | 0.0       |  | Grass and frequent sandstone cobbles over: Loose, dark brown, silty fine to medium sand, abundant subrounded gravel and subangular cobbles, rootlets and plastic fragments. (MADE GROUND) | Dry                                          | 0,0                   |  |
|                                                                                   | WSMW032 - 0.6m (S,L)         |  |                   |                | 0.5       |                                                                                   | Reinforced concrete blocks (MADE GROUND)                                                                                                                                                  | Dry                                          | 0,0                   |  |
|                                                                                   |                              |                                                                                   |                   |                | 1.0       |                                                                                   | Loose, brown medium to coarse sand, abundant subangular to subrounded cobbles with whole bricks and brick fragments. (MADE GROUND)                                                        |                                              | 0,0                   |  |
|                                                                                   |                              |                                                                                   |                   |                | 1.1       |                                                                                   | Trial Pit terminated at 1.1m due to refusal                                                                                                                                               | Terminated due to reinforced concrete blocks |                       |  |
|                                                                                   |                              |                                                                                   |                   |                | 1.5       |                                                                                   |                                                                                                                                                                                           |                                              |                       |  |
|                                                                                   |                              |                                                                                   |                   |                | 2.0       |                                                                                   |                                                                                                                                                                                           |                                              |                       |  |
|                                                                                   |                              |                                                                                   |                   |                | 2.5       |                                                                                   |                                                                                                                                                                                           |                                              |                       |  |
|                                                                                   |                              |                                                                                   |                   |                | 3.0       |                                                                                   |                                                                                                                                                                                           |                                              |                       |  |
|                                                                                   |                              |                                                                                   |                   |                | 3.5       |                                                                                   |                                                                                                                                                                                           |                                              |                       |  |
|                                                                                   |                              |                                                                                   |                   |                | 4.0       |                                                                                   |                                                                                                                                                                                           |                                              |                       |  |
|                                                                                   |                              |                                                                                   |                   |                | 4.5       |                                                                                   |                                                                                                                                                                                           |                                              |                       |  |
|                                                                                   |                              |                                                                                   |                   |                | 5.0       |                                                                                   |                                                                                                                                                                                           |                                              |                       |  |

| LOCATION / NOTES:                                                                                                                             | LEGEND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | BOREHOLE LOG                                                                                                                                                                                                                                                                                                                                                                                                                                                      |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| NVO = No visual or olfactory evidence of contamination<br>S,V = Contamination Observations<br>S - Odour score (0-5)<br>V - Visual score (0-5) |  Disturbed Sample<br> Undisturbed Sample<br> Headspace Analysis<br> Down Borehole Analysis<br> Groundwater Table<br> Perched Water Table | Job Title: BP Llandarcy Whole Site Investigation<br>Location: BP Llandarcy Refinery<br>Client: BP/WDA<br><br><div style="display: flex; justify-content: space-between;"> <div style="text-align: center;">  </div> <div> App'd: _____ Date: February 2004<br/> Drawn: HM Ref: _____<br/> Scale: As scale Job No: 39991-044-785<br/> Drg. Size: A4 BOREHOLE LOG </div> </div> |  |

| BOREHOLE<br>CONSTRUCTION                                                          | SAMPLE                    |                                                                                   | SOIL VAPOUR (ppm) | GROUNDWATER | DEPTH (m) | GEOLOGY                                                                                                                                                                                            | BOREHOLE NUMBER: WSMW050 (PIT) |     | PAGE 1 of 1           |  |
|-----------------------------------------------------------------------------------|---------------------------|-----------------------------------------------------------------------------------|-------------------|-------------|-----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|-----|-----------------------|--|
|                                                                                   | NUMBER                    | TYPE                                                                              |                   |             |           |                                                                                                                                                                                                    | DRILLING DATES: 6/11/03        |     | DRILLING METHODS: JCB |  |
|                                                                                   |                           |                                                                                   |                   |             |           |                                                                                                                                                                                                    | DRILLER: JCB                   |     | BOREHOLE DIAMETER: -  |  |
|                                                                                   |                           |                                                                                   |                   |             |           |                                                                                                                                                                                                    | LOGGED BY: CM                  |     | SCREEN TYPE & DIAM: - |  |
|                                                                                   |                           |                                                                                   |                   |             |           |                                                                                                                                                                                                    | CHECKED BY: SG                 |     | SCREEN SLOT SIZE: -   |  |
| DESCRIPTION                                                                       |                           |                                                                                   |                   |             |           |                                                                                                                                                                                                    | COMMENTS                       | S,V |                       |  |
|  | WSMW050 -<br>0.6m (S,L,P) |  | *0.1              | *0.4        | 0.0       | Loose light brown silty fine to medium sand with frequent rootlets. (MADE GROUND)                                                                                                                  |                                |     |                       |  |
|                                                                                   |                           |                                                                                   |                   |             | 0.5       | Loose dark brown silty slightly gravelly fine sand with frequent cobbles of sandstone and bricks. Gravel is angular to subrounded fine to coarse comprising of sandstone and bricks. (MADE GROUND) | Dry                            | 0,0 |                       |  |
|                                                                                   |                           |                                                                                   |                   |             | 1.0       | With rare wood and rusty metal fragments at 1.0m.<br>Trial pit terminated at 1.1m due to refusal.                                                                                                  | Dry                            | 0,0 |                       |  |
|                                                                                   |                           |                                                                                   |                   |             | 1.5       |                                                                                                                                                                                                    |                                |     |                       |  |
|                                                                                   |                           |                                                                                   |                   |             | 2.0       |                                                                                                                                                                                                    |                                |     |                       |  |
|                                                                                   |                           |                                                                                   |                   |             | 2.5       |                                                                                                                                                                                                    |                                |     |                       |  |
|                                                                                   |                           |                                                                                   |                   |             | 3.0       |                                                                                                                                                                                                    |                                |     |                       |  |
|                                                                                   |                           |                                                                                   |                   |             | 3.5       |                                                                                                                                                                                                    |                                |     |                       |  |
|                                                                                   |                           |                                                                                   |                   |             | 4.0       |                                                                                                                                                                                                    |                                |     |                       |  |
|                                                                                   |                           |                                                                                   |                   |             | 4.5       |                                                                                                                                                                                                    |                                |     |                       |  |
|                                                                                   |                           |                                                                                   |                   |             | 5.0       |                                                                                                                                                                                                    |                                |     |                       |  |

| LOCATION / NOTES:                                                                                                                             | LEGEND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | BOREHOLE LOG                                                                                                                                                                                      |                       |
|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| NVO = No visual or olfactory evidence of contamination<br>S,V = Contamination Observations<br>S - Odour score (0-5)<br>V - Visual score (0-5) |  Disturbed Sample<br> Undisturbed Sample<br> Headspace Analysis<br> Down Borehole Analysis<br> Groundwater Table<br> Perched Water Table | Job Title: BP Llandarcy Whole Site Investigation<br>Location: BP Llandarcy Refinery<br>Client: BP/WDA<br><br> |                       |
|                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | App'd:                                                                                                                                                                                            | Date: November 2003   |
|                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Drawn: CM                                                                                                                                                                                         | Ref:                  |
|                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Scale: As scale                                                                                                                                                                                   | Job No: 39991-044-785 |
|                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Dwg. Size: A4                                                                                                                                                                                     | BOREHOLE LOG          |

| BOREHOLE<br>CONSTRUCTION | SAMPLE                 |      | SOIL VAPOUR (ppm) | GROUNDWATER                           | DEPTH (m) | GEOLOGY                                                                                                               | BOREHOLE NUMBER: WSMW049 (PIT)                                                                                                |                                           | PAGE 1 of 1                                           |     |
|--------------------------|------------------------|------|-------------------|---------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|-------------------------------------------------------|-----|
|                          | NUMBER                 | TYPE |                   |                                       |           |                                                                                                                       | DRILLING DATES: 10/11/03                                                                                                      |                                           | DRILLING METHODS: JCB                                 |     |
|                          |                        |      |                   |                                       |           |                                                                                                                       | DRILLER: JCB                                                                                                                  |                                           | BOREHOLE DIAMETER: -                                  |     |
|                          |                        |      |                   |                                       |           |                                                                                                                       | LOGGED BY: SS                                                                                                                 |                                           | SCREEN TYPE & DIAM: -                                 |     |
|                          |                        |      |                   |                                       |           |                                                                                                                       | CHECKED BY: -                                                                                                                 |                                           | SCREEN SLOT SIZE: -                                   |     |
|                          |                        |      |                   |                                       |           |                                                                                                                       | DESCRIPTION                                                                                                                   | COMMENTS                                  | S,V                                                   |     |
|                          | WSMW049 - 0.6m (S,L,P) | *2.9 |                   |                                       | 0.0       |                                                                                                                       | Grass over:<br>Loose, dark brown, slightly silty, slightly gravelly, fine sand with occasional brick fragments. (MADE GROUND) | Damp. NVO                                 | 0,0                                                   |     |
|                          |                        |      |                   |                                       |           |                                                                                                                       | 0.5                                                                                                                           | With frequent brick fragments from 0.55m. | Damp. Faint, weathered hydrocarbon odour. No staining | 1,0 |
|                          | WSMW049 - 1.6m (S,L)   | *3.4 |                   |                                       | 1.0       | Becoming loose, brown, silty sand with cobbles of brick and cemented brick wall and trace ash (<5%). (MADE GROUND)    | Damp. NVO                                                                                                                     | 0,0                                       |                                                       |     |
|                          |                        |      |                   |                                       | 1.5       | Soft, grey (stained), sandy silt with a trace of fine gravel, brick, concrete and furnace brick clasts. (MADE GROUND) | Damp-wet. Moderate hydrocarbon odour and grey staining                                                                        | 2,2                                       |                                                       |     |
|                          |                        |      |                   |                                       | 2.0       |                                                                                                                       | Damp. Slight hydrocarbon odour, patchy grey staining                                                                          | 1,1                                       |                                                       |     |
| WSMW049 - 2.7m (S,L)     | *6.2                   | 2.5  |                   | No staining. Slight hydrocarbon odour | 1,0       |                                                                                                                       |                                                                                                                               |                                           |                                                       |     |
|                          |                        | *6.6 |                   |                                       | 3.0       |                                                                                                                       | Trial pit terminated at 2.7m due to refusal.                                                                                  |                                           |                                                       |     |
|                          |                        |      |                   |                                       | 3.5       |                                                                                                                       |                                                                                                                               |                                           |                                                       |     |
|                          |                        |      |                   |                                       | 4.0       |                                                                                                                       |                                                                                                                               |                                           |                                                       |     |
|                          |                        |      |                   |                                       | 4.5       |                                                                                                                       |                                                                                                                               |                                           |                                                       |     |
|                          |                        |      |                   |                                       | 5.0       |                                                                                                                       |                                                                                                                               |                                           |                                                       |     |

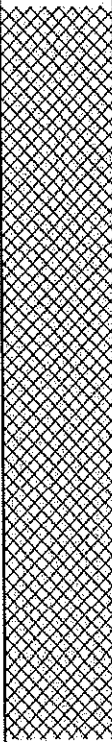
  

| LOCATION / NOTES:                                                                                                                             | LEGEND                                                                                                                             | BOREHOLE LOG                                                                                                                                                                                                                                                                                                                                                                                  |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| NVO = No visual or olfactory evidence of contamination<br>S,V = Contamination Observations<br>S - Odour score (0-5)<br>V - Visual score (0-5) | Disturbed Sample<br>Undisturbed Sample<br>Headspace Analysis<br>Down Borehole Analysis<br>Groundwater Table<br>Perched Water Table | Job Title: BP Llandarcy Whole Site Investigation<br>Location: BP Llandarcy Refinery<br>Client: BP/MDA<br><br><div style="display: flex; justify-content: space-between;"> <div style="text-align: center;"> <br/> <b>URS</b> </div> <div> App'd: _____ Date: November 2003<br/> Drawn: SS Ref: _____<br/> Scale: As scale Job No: 39991-044-785<br/> Drg. Size: A4 BOREHOLE LOG </div> </div> |  |

| BOREHOLE<br>CONSTRUCTION | SAMPLE                      |      | SOIL VAPOUR (ppm) | GROUNDWATER | DEPTH (m) | GEOLOGY | BOREHOLE NUMBER: WSMW034 (PIT)                                                                                                                                                                                                                                                                                                   |  | PAGE 1 of 1                    |                          |
|--------------------------|-----------------------------|------|-------------------|-------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------------------------|--------------------------|
|                          | NUMBER                      | TYPE |                   |             |           |         | DRILLING DATES: 18/11/03                                                                                                                                                                                                                                                                                                         |  | DRILLING METHODS: JCB          |                          |
|                          |                             |      |                   |             |           |         | DRILLER: JCB - Leighton                                                                                                                                                                                                                                                                                                          |  | BOREHOLE DIAMETER: -           |                          |
|                          |                             |      |                   |             |           |         | LOGGED BY: OG                                                                                                                                                                                                                                                                                                                    |  | SCREEN TYPE & DIAM: -          |                          |
|                          |                             |      |                   |             |           |         | CHECKED BY: SG                                                                                                                                                                                                                                                                                                                   |  | SCREEN SLOT SIZE: -            |                          |
|                          | WSMW034<br>- 0.15m<br>(S,L) |      | 2.3               |             | 0.0       |         | <b>DESCRIPTION</b><br>Loose, mottled brown to black, slightly silty, fine to coarse sand. Frequent angular sandstone gravel to cobbles. Occasional gravel to coarse sand size slag/clinker. Frequent rootlets. (MADE GROUND)<br>Angular SANDSTONE gravel to boulders.<br>Trial pit terminated at 0.4m due to refusal on bedrock. |  | <b>COMMENTS</b><br>Dry to Damp | <b>S,V</b><br>0,0<br>0,0 |
|                          |                             |      |                   |             | 0.5       |         |                                                                                                                                                                                                                                                                                                                                  |  |                                |                          |
|                          |                             |      |                   |             | 1.0       |         |                                                                                                                                                                                                                                                                                                                                  |  |                                |                          |
|                          |                             |      |                   |             | 1.5       |         |                                                                                                                                                                                                                                                                                                                                  |  |                                |                          |
|                          |                             |      |                   |             | 2.0       |         |                                                                                                                                                                                                                                                                                                                                  |  |                                |                          |
|                          |                             |      |                   |             | 2.5       |         |                                                                                                                                                                                                                                                                                                                                  |  |                                |                          |
|                          |                             |      |                   |             | 3.0       |         |                                                                                                                                                                                                                                                                                                                                  |  |                                |                          |
|                          |                             |      |                   |             | 3.5       |         |                                                                                                                                                                                                                                                                                                                                  |  |                                |                          |
|                          |                             |      |                   |             | 4.0       |         |                                                                                                                                                                                                                                                                                                                                  |  |                                |                          |
|                          |                             |      |                   |             | 4.5       |         |                                                                                                                                                                                                                                                                                                                                  |  |                                |                          |
|                          |                             |      |                   |             | 5.0       |         |                                                                                                                                                                                                                                                                                                                                  |  |                                |                          |

| LOCATION / NOTES:                                                                                                                             | LEGEND                                                                                                                                                                                                                                                              | BOREHOLE LOG                                                                                           |                                                                                                                                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| NVO = No visual or olfactory evidence of contamination<br>S,V = Contamination Observations<br>S - Odour score (0-5)<br>V - Visual score (0-5) | <div>  Disturbed Sample           </div> <div>  Undisturbed Sample           </div> <div>  Headspace Analysis           </div> <div>  Down Borehole Analysis           </div> <div>  Groundwater Table           </div> <div>  Perched Water Table           </div> | Job Title: BP Llandarcy Whole Site Investigation<br>Location: BP Llandarcy Refinery<br>Client: BP/ANDA |                                                                                                                                 |
|                                                                                                                                               |                                                                                                                                                                                                                                                                     | <div> </div>                                                                                           | App'd: _____ Date: November 2003<br>Drawn: OG Ref: _____<br>Scale: As scale Job No: 39991-044-785<br>Drg. Size: A4 BOREHOLE LOG |

| BOREHOLE<br>CONSTRUCTION                                                           | SAMPLE                  |                                                                                   | SOIL VAPOUR (ppm) | GROUNDWATER | DEPTH (m)                                                                         | GEOLOGY                                                                            | BOREHOLE NUMBER: WSMW033 (PIT)                                                                        |                              | PAGE 1 of 1           |                                                                                                                                |
|------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|-------------------|-------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------|
|                                                                                    | NUMBER                  | TYPE                                                                              |                   |             |                                                                                   |                                                                                    | DRILLING DATES: 7/11/03                                                                               |                              | DRILLING METHODS: JCB |                                                                                                                                |
|                                                                                    |                         |                                                                                   |                   |             |                                                                                   |                                                                                    | DRILLER: JCB                                                                                          |                              | BOREHOLE DIAMETER: -  |                                                                                                                                |
|                                                                                    |                         |                                                                                   |                   |             |                                                                                   |                                                                                    | LOGGED BY: SS                                                                                         |                              | SCREEN TYPE & DIAM: - |                                                                                                                                |
|                                                                                    |                         |                                                                                   |                   |             |                                                                                   |                                                                                    | CHECKED BY: SG                                                                                        |                              | SCREEN SLOT SIZE: -   |                                                                                                                                |
|                                                                                    |                         |                                                                                   |                   |             |                                                                                   |                                                                                    | DESCRIPTION                                                                                           | COMMENTS                     | S,V                   |                                                                                                                                |
|  | WSMW033 -<br>0.9m (S,L) |  | *2.1              |             | 0.0                                                                               |  | Loose, dark brown, fine sandy SILT with frequent gravel and cobbles of sandstone, with some rootlets. | Slightly earthy odour. Damp. | 0,0                   |                                                                                                                                |
|                                                                                    |                         |                                                                                   |                   |             | 0.5                                                                               |                                                                                    |                                                                                                       |                              |                       |                                                                                                                                |
|                                                                                    |                         |                                                                                   |                   |             | 1.0                                                                               |                                                                                    |                                                                                                       |                              |                       |                                                                                                                                |
|                                                                                    |                         |                                                                                   | *2.2              | 1.5         | Loose, dark brown, slightly gravelly, sandy SILT with frequent sandstone cobbles. |                                                                                    |                                                                                                       | Damp. NVO                    | 0,0                   |                                                                                                                                |
|                                                                                    |                         |                                                                                   |                   |             |                                                                                   |                                                                                    |                                                                                                       |                              |                       |                                                                                                                                |
|                                                                                    |                         |                                                                                   | *2.1              | 2.0         |                                                                                   |                                                                                    |                                                                                                       |                              |                       | As above with increasing sand.<br>Becoming loose-medium dense, brown, gravelly, very sandy SILT with frequent angular cobbles. |
|                                                                                    |                         |                                                                                   |                   |             |                                                                                   |                                                                                    |                                                                                                       |                              |                       |                                                                                                                                |
|                                                                                    |                         | WSMW033 -<br>2.4m (S,L)                                                           | *2.0              | 2.5         | Damp-wet. NVO                                                                     | 0,0                                                                                |                                                                                                       |                              |                       |                                                                                                                                |
|                                                                                    |                         |                                                                                   |                   |             |                                                                                   |                                                                                    |                                                                                                       |                              |                       |                                                                                                                                |
|                                                                                    |                         |                                                                                   | *2.4              | 3.0         |                                                                                   | Terminated at 3.1m due to collapse                                                 | Damp. NVO                                                                                             | 0,0                          |                       |                                                                                                                                |
|                                                                                    |                         |                                                                                   |                   | 3.5         |                                                                                   |                                                                                    |                                                                                                       |                              |                       |                                                                                                                                |
|                                                                                    |                         |                                                                                   |                   | 4.0         |                                                                                   |                                                                                    |                                                                                                       |                              |                       |                                                                                                                                |
|                                                                                    |                         |                                                                                   |                   | 4.5         |                                                                                   |                                                                                    |                                                                                                       |                              |                       |                                                                                                                                |
|                                                                                    |                         |                                                                                   |                   | 5.0         |                                                                                   |                                                                                    |                                                                                                       |                              |                       |                                                                                                                                |

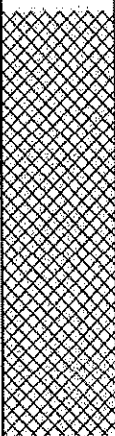
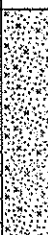
  

| LOCATION / NOTES:                                      | LEGEND                                                                                                     | BOREHOLE LOG                                     |                       |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------|-----------------------|
| NVO = No visual or olfactory evidence of contamination |  Disturbed Sample       | Job Title: BP Llandarcy Whole Site Investigation |                       |
| S,V = Contamination Observations                       |  Undisturbed Sample     | Location: BP Llandarcy Refinery                  |                       |
| S - Odour score (0-5)                                  |  Headspace Analysis     | Client: BP/WDA                                   |                       |
| V - Visual score (0-5)                                 |  Down Borehole Analysis | App'd:                                           | Date: November 2003   |
|                                                        |  Groundwater Table      | Drawn: SS                                        | Ref:                  |
|                                                        |  Perched Water Table    | Scale: As scale                                  | Job No: 39991-044-785 |
|                                                        |                                                                                                            | Drg. Size: A4                                    | BOREHOLE LOG          |

| BOREHOLE<br>CONSTRUCTION                                                           | SAMPLE                  |                                                                                   | SOIL VAPOUR (ppm) | GROUNDWATER | DEPTH (m) | GEOLOGY                                                                           | BOREHOLE NUMBER: WSMW066 (PIT) |                                                                                                                                                                                                   | PAGE 1 of 1                                                                      |     |
|------------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|-------------------|-------------|-----------|-----------------------------------------------------------------------------------|--------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------|-----|
|                                                                                    | NUMBER                  | TYPE                                                                              |                   |             |           |                                                                                   | DRILLING DATES: December       |                                                                                                                                                                                                   | DRILLING METHODS: JCB                                                            |     |
|                                                                                    |                         |                                                                                   |                   |             |           |                                                                                   | DRILLER: JCB                   |                                                                                                                                                                                                   | BOREHOLE DIAMETER: -                                                             |     |
|                                                                                    |                         |                                                                                   |                   |             |           |                                                                                   | LOGGED BY: HM                  |                                                                                                                                                                                                   | SCREEN TYPE & DIAM: -                                                            |     |
|                                                                                    |                         |                                                                                   |                   |             |           |                                                                                   | CHECKED BY: SG                 |                                                                                                                                                                                                   | SCREEN SLOT SIZE: -                                                              |     |
|                                                                                    |                         |                                                                                   |                   |             |           |                                                                                   | DESCRIPTION                    | COMMENTS                                                                                                                                                                                          | S,V                                                                              |     |
|  | WSMW066 -<br>0.8m (S,L) |  |                   |             |           |  | 0.0                            | Soft to firm, fairly compact, dark brown slightly sandy silt with some fine to coarse gravel and rootlets. (MADE GROUND)                                                                          | NVO, damp.                                                                       | 0,0 |
|                                                                                    |                         |                                                                                   |                   |             |           |                                                                                   | 0.5                            | Medium dense, light brown silty sand with some fine to coarse gravel, rootlets and frequent subangular to subrounded sandstone cobbles and occasional subangular sandstone boulder. (MADE GROUND) | NVO, damp.                                                                       | 0,0 |
|                                                                                    |                         |                                                                                   |                   |             |           |                                                                                   | 1.0                            | With occasional ash from 1.2m.                                                                                                                                                                    | Slight seepage, odour of mid to light hydrocarbon with some grey staining, damp. | 2,2 |
|                                                                                    |                         |                                                                                   |                   |             |           |                                                                                   | 1.5                            | Soft to firm, red brown slightly sandy SILT with some subangular sandstone cobbles.                                                                                                               | NVO, damp.                                                                       | 0,0 |
|                                                                                    |                         |                                                                                   |                   |             |           |                                                                                   | 2.0                            |                                                                                                                                                                                                   | NVO, damp.                                                                       | 0,0 |
|                                                                                    |                         |                                                                                   |                   |             |           |                                                                                   | 2.5                            | Soft to firm, brown sandy SILT with some fine to coarse gravel and frequent subangular to subrounded sandstone cobbles.                                                                           | NVO, damp.                                                                       | 0,0 |
|                                                                                    |                         |                                                                                   |                   |             |           |                                                                                   | 3.0                            |                                                                                                                                                                                                   | NVO, damp.                                                                       | 0,0 |
|                                                                                    |                         |                                                                                   |                   |             |           |                                                                                   | 3.5                            | With frequent fine to coarse gravel with frequent angular, subangular and subrounded cobbles.                                                                                                     | NVO, damp.                                                                       | 0,0 |
|                                                                                    |                         |                                                                                   |                   |             |           |                                                                                   | 4.0                            | Trial pit terminated at 4.0m due to refusal.                                                                                                                                                      |                                                                                  |     |
|                                                                                    |                         |                                                                                   |                   |             |           |                                                                                   |                                |                                                                                                                                                                                                   |                                                                                  |     |

| LOCATION / NOTES:                                      | LEGEND                                                                                                     | BOREHOLE LOG                                                                         |                                  |
|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|----------------------------------|
| NVO = No visual or olfactory evidence of contamination |  Disturbed Sample       | Job Title: BP Llandarcy Whole Site Investigation                                     |                                  |
| S,V = Contamination Observations                       |  Undisturbed Sample     | Location: BP Llandarcy Refinery                                                      |                                  |
| S - Odour score (0-5)                                  |  Headspace Analysis     | Client: BP/WDA                                                                       |                                  |
| V - Visual score (0-5)                                 |  Down Borehole Analysis |  | App'd: _____ Date: December 2003 |
|                                                        |  Groundwater Table      | Drawn: HM                                                                            | Ref: _____                       |
|                                                        |  Perched Water Table    | Scale: As scale                                                                      | Job No: 39991-044-785            |
|                                                        |                                                                                                            | Drg. Size: A4                                                                        | BOREHOLE LOG                     |

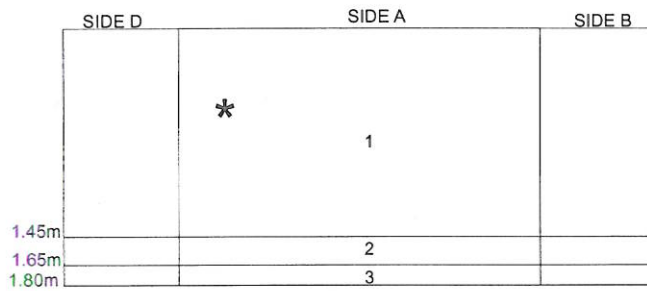
| BOREHOLE<br>CONSTRUCTION                                                          | SAMPLE                  |                                                                                   | SOIL VAPOUR (ppm) | GROUNDWATER | DEPTH (m)                                                                         | GEOLOGY                                                                           | BOREHOLE NUMBER: WSMW068 (PIT) |                                                           | PAGE 1 of 1                                                         |               |     |
|-----------------------------------------------------------------------------------|-------------------------|-----------------------------------------------------------------------------------|-------------------|-------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------------------------------|-----------------------------------------------------------|---------------------------------------------------------------------|---------------|-----|
|                                                                                   | NUMBER                  | TYPE                                                                              |                   |             |                                                                                   |                                                                                   | DRILLING DATES: 7/11/03        |                                                           | DRILLING METHODS: JCB                                               |               |     |
|                                                                                   |                         |                                                                                   |                   |             |                                                                                   |                                                                                   | DRILLER: JCB                   |                                                           | BOREHOLE DIAMETER: -                                                |               |     |
|                                                                                   |                         |                                                                                   |                   |             |                                                                                   |                                                                                   | LOGGED BY: SS                  |                                                           | SCREEN TYPE & DIAM: -                                               |               |     |
|                                                                                   |                         |                                                                                   |                   |             |                                                                                   |                                                                                   | CHECKED BY: SG                 |                                                           | SCREEN SLOT SIZE: -                                                 |               |     |
|                                                                                   |                         |                                                                                   |                   |             |                                                                                   |                                                                                   | DESCRIPTION                    | COMMENTS                                                  | S,V                                                                 |               |     |
|  | WSMW068 -<br>1.0m (S,L) |  | *1.9              |             |  |                                                                                   | 0.0                            | Loose, brown, sandy SILT with frequent sandstone cobbles. | Dry-damp: NVO                                                       | 0,0           |     |
|                                                                                   |                         |                                                                                   |                   |             |                                                                                   |                                                                                   | 0.5                            |                                                           |                                                                     |               |     |
|                                                                                   | WSMW068 -<br>1.8m (S,L) |  | *1.5              | *1.8        |                                                                                   |  |                                | 1.0                                                       | Becoming more sandy from 1.0m, to silty sand with frequent cobbles. | Damp-wet: NVO | 0,0 |
|                                                                                   |                         |                                                                                   |                   |             |                                                                                   |                                                                                   |                                | 1.5                                                       | Frequent, flaggy sandstone cobbles and boulders from 1.5m.          | Damp-wet: NVO | 0,0 |
|                                                                                   |                         |                                                                                   |                   |             |                                                                                   |                                                                                   | 2.0                            | Trial Pit terminated at 1.8m due to refusal.              |                                                                     | 0,0           |     |
|                                                                                   |                         |                                                                                   |                   |             |                                                                                   |                                                                                   | 2.5                            |                                                           |                                                                     |               |     |
|                                                                                   |                         |                                                                                   |                   |             |                                                                                   |                                                                                   | 3.0                            |                                                           |                                                                     |               |     |
|                                                                                   |                         |                                                                                   |                   |             |                                                                                   |                                                                                   | 3.5                            |                                                           |                                                                     |               |     |
|                                                                                   |                         |                                                                                   |                   |             |                                                                                   |                                                                                   | 4.0                            |                                                           |                                                                     |               |     |
|                                                                                   |                         |                                                                                   |                   |             |                                                                                   |                                                                                   | 4.5                            |                                                           |                                                                     |               |     |
|                                                                                   |                         |                                                                                   |                   |             |                                                                                   |                                                                                   | 5.0                            |                                                           |                                                                     |               |     |

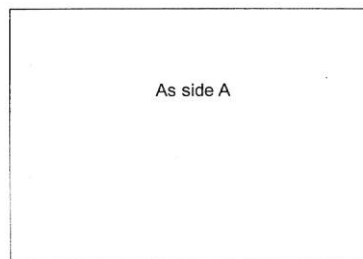
| LOCATION / NOTES:                                                                                                                             | LEGEND                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | BOREHOLE LOG                                                                                                                                                                                                                                                                                                                                                                                                                                                 |        |                     |           |      |                 |                       |               |              |
|-----------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|---------------------|-----------|------|-----------------|-----------------------|---------------|--------------|
| NVO = No visual or olfactory evidence of contamination<br>S,V = Contamination Observations<br>S - Odour score (0-5)<br>V - Visual score (0-5) |  Disturbed Sample<br> Undisturbed Sample<br> Headspace Analysis<br> Down Borehole Analysis<br> Groundwater Table<br> Perched Water Table | Job Title: BP Llandarcy Whole Site Investigation<br>Location: BP Llandarcy Refinery<br>Client: BP/WDA<br><br> <table border="1"> <tr> <td>App'd:</td> <td>Date: November 2003</td> </tr> <tr> <td>Drawn: SS</td> <td>Ref:</td> </tr> <tr> <td>Scale: As scale</td> <td>Job No: 39991-044-785</td> </tr> <tr> <td>Drg. Size: A4</td> <td>BOREHOLE LOG</td> </tr> </table> | App'd: | Date: November 2003 | Drawn: SS | Ref: | Scale: As scale | Job No: 39991-044-785 | Drg. Size: A4 | BOREHOLE LOG |
| App'd:                                                                                                                                        | Date: November 2003                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                     |           |      |                 |                       |               |              |
| Drawn: SS                                                                                                                                     | Ref:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                     |           |      |                 |                       |               |              |
| Scale: As scale                                                                                                                               | Job No: 39991-044-785                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                     |           |      |                 |                       |               |              |
| Drg. Size: A4                                                                                                                                 | BOREHOLE LOG                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                              |        |                     |           |      |                 |                       |               |              |

TRIAL PIT NUMBER: MSTP117  
GROUND ELEVATION: -  
DATE OF EXCAVATION: 3/6/98  
WATER LEVEL: DRY  
LOGGED BY: RF  
APPROVED BY:

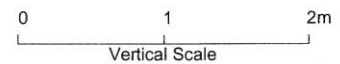
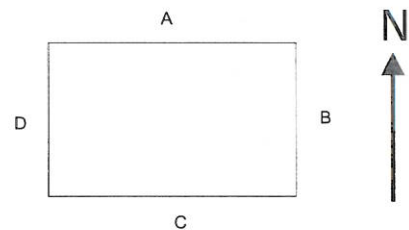
### SIDE ELEVATIONS



### SIDE C



### PLAN



Key:

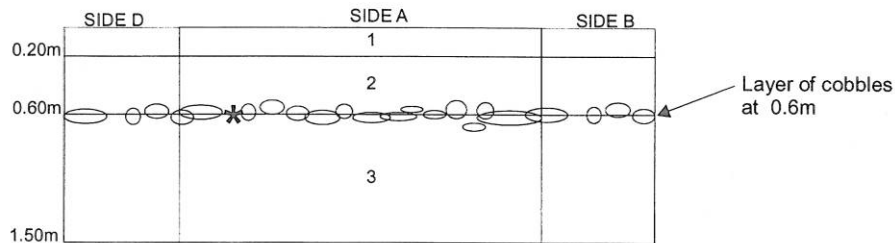
- \* Soil Sample location
- WA Water Sample
- HS Headspace Analysis
- Water Ingress

| STRATA DESCRIPTIONS                                                                                                                                                                                                                                                                             | COMMENTS                        | SAMPLES                                                                                                                              |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| 1. Dark brown CLAY with brick fragments, coarse gravel and ash with 2cm of topsoil with rootlets at surface (MADE GROUND)<br>2. Orange-brown plastic gravelly CLAY<br>3. CLAY with weathered sandstone to sandstone bedrock at base of pit.<br><br>Trial pit terminated at 1.80 mbgl on refusal | a. No odour or staining evident | <u>PID RESULTS</u><br>0.5m - 21.5 ppm<br>1.0m - 7 ppm<br>1.5m - 4.2 ppm<br>1.8m - 4.2 ppm<br><br><u>SOIL SAMPLES</u><br>MSTP117-0.5m |

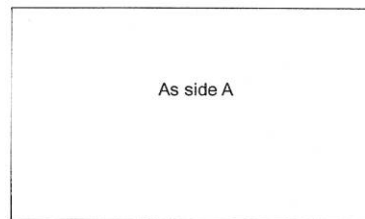
|            |                                  |       |
|------------|----------------------------------|-------|
| Job Title: | SOIL & GROUNDWATER INVESTIGATION |       |
| Location:  | LLANDARCY REFINERY               |       |
| Client:    | BP LLANDARCY                     |       |
| Job No:    | 39991-001-401                    | DRAFT |

TRIAL PIT NUMBER: MSTP118  
 GROUND ELEVATION: -  
 DATE OF EXCAVATION: 3/6/98  
 WATER LEVEL: DRY  
 LOGGED BY: RC  
 APPROVED BY:

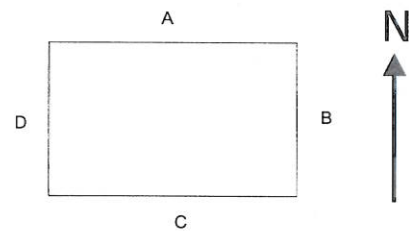
### SIDE ELEVATIONS



### SIDE C



### PLAN



0 1 2m  
 Vertical Scale

### Key:

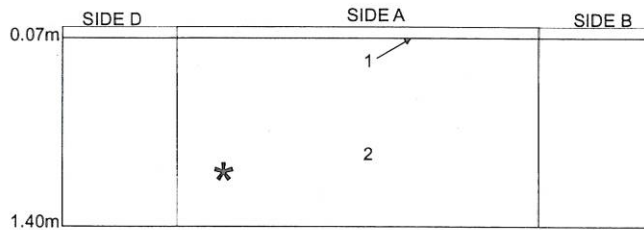
- \* Soil Sample location
- WA Water Sample
- HS Headspace Analysis
- Water Ingress

| STRATA DESCRIPTIONS                                                                                                                                                                                                                                                                                         | COMMENTS                                 | SAMPLES                                                                      |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------|------------------------------------------------------------------------------|
| 1. Black peaty silty CLAY (TOPSOIL)<br>2. Loose brown SAND with some fine sub-rounded gravel (MADE GROUND)<br>cobbles of weathered bedrock at 0.6m<br>3. Weathered sandy CLAY with sub-rounded gravel, silty lenses and and fragments of sandstone bedrock.<br>Trial pit terminated at 1.50 mbgl on refusal | a. Slightly damp in silty lenses at 1.0m | <u>PID RESULTS</u><br>0.5m - 0.7 ppm<br>1.0 - 0.3 ppm<br><u>SOIL SAMPLES</u> |

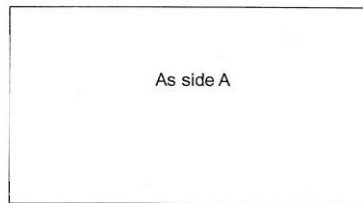
|                                                                                                                |       |
|----------------------------------------------------------------------------------------------------------------|-------|
| Job Title: SOIL & GROUNDWATER INVESTIGATION                                                                    |       |
| Location: LLANDARCY REFINERY                                                                                   |       |
| Client: BP LLANDARCY                                                                                           |       |
| Job No: 39991-001-401                                                                                          | DRAFT |
|  <b>DAMES &amp; MOORE</b> |       |

TRIAL PIT NUMBER: MSTP119  
 GROUND ELEVATION: -  
 DATE OF EXCAVATION: 3/6/98  
 WATER LEVEL: DRY  
 LOGGED BY: RC  
 APPROVED BY:

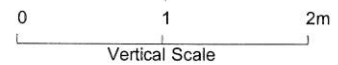
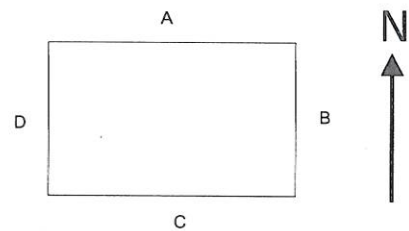
### SIDE ELEVATIONS



### SIDE C



### PLAN



### Key:

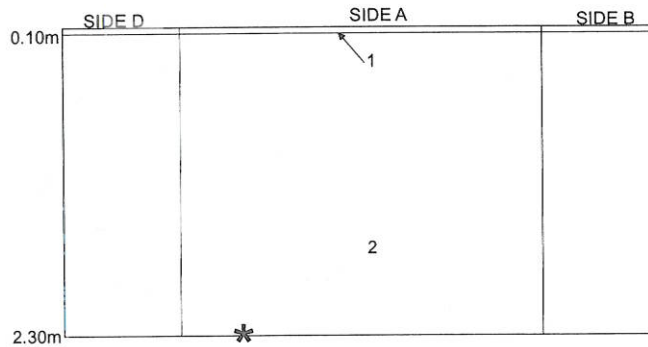
- \* Soil Sample location
- WA Water Sample
- HS Headspace Analysis
- ➔ Water Ingress

| STRATA DESCRIPTIONS                                                                                                                                                                                                                      | COMMENTS                                                                    | SAMPLES                                                                                                             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| 1. Compacted GRAVEL with large cobbles (MADE GROUND)<br>2. Large sub-angular cobbles of CONCRETE and weathered bedrock fragments (MADE GROUND)<br>Some slightly clayey lenses at 0.8m<br><br>Trial pit terminated at 1.4 mbgl on refusal | a. Black staining and odour at 1.0m and 1.4m<br>b. Hard to excavate by 1.2m | <u>PID RESULTS</u><br>0.5m - 0.7 ppm<br>1.0m - 8.4 ppm<br>1.4m - 7.0 ppm<br><br><u>SOIL SAMPLES</u><br>MSTP119-1.0m |

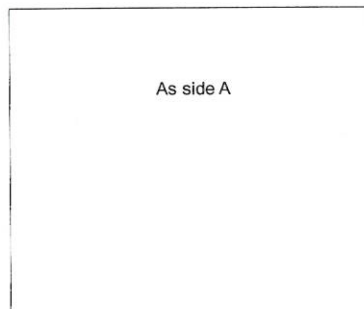
|                                                                                                                |                                  |       |
|----------------------------------------------------------------------------------------------------------------|----------------------------------|-------|
| Job Title:                                                                                                     | SOIL & GROUNDWATER INVESTIGATION |       |
| Location:                                                                                                      | LLANDARCY REFINERY               |       |
| Client:                                                                                                        | BP LLANDARCY                     |       |
| Job No:                                                                                                        | 39991-001-401                    | DRAFT |
|  <b>DAMES &amp; MOORE</b> |                                  |       |

TRIAL PIT NUMBER: MSTP125  
GROUND ELEVATION: -  
DATE OF EXCAVATION: 3/6/98  
WATER LEVEL: DRY  
LOGGED BY: RC  
APPROVED BY:

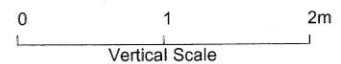
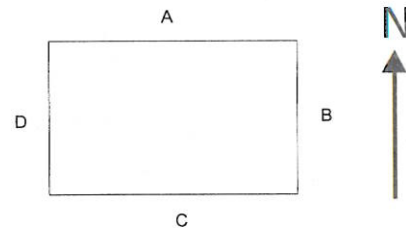
### SIDE ELEVATIONS



### SIDE C



### PLAN



### Key:

- \* Soil Sample location
- WA Water Sample
- HS Headspace Analysis
- ➔ Water Ingress

| STRATA DESCRIPTIONS                                                                                                                                                                                                                                                 | COMMENTS                        | SAMPLES                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Compacted <b>HARDCORE</b> with loose soft brown silt and rootlets with some vegetation at surface ( <b>MADE GROUND</b> )<br>2. Loose light brown very sandy <b>GRAVEL</b> with boulders of weathered bedrock<br><br>Trial pit terminated at 2.30 mbgl on refusal | a. No odour or staining evident | <u>PID RESULTS</u><br>0.5m - 0.4 ppm<br>1.0m - 0.4 ppm<br>1.5m - 0.4 ppm<br>2.0m - 0.4 ppm<br>2.3m - 0.4 ppm<br><u>SOIL SAMPLES</u><br>MSTP125-2.3m |

Job Title: **SOIL & GROUNDWATER INVESTIGATION**

Location: **LLANDARCY REFINERY**

Client: **BP LLANDARCY**

Job No: **39991-001-401**

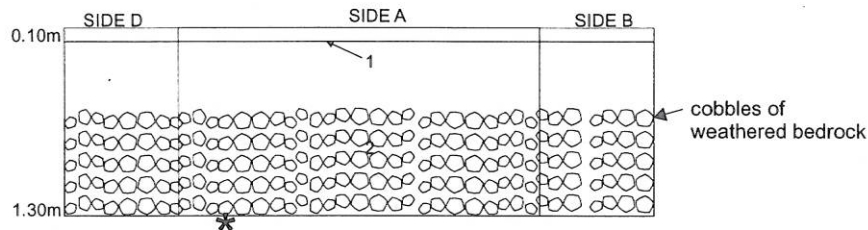
**DRAFT**



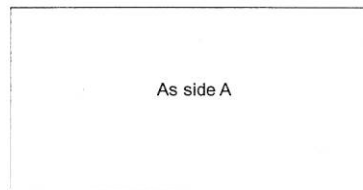
**DAMES & MOORE**

TRIAL PIT NUMBER: MSTP126  
 GROUND ELEVATION: -  
 DATE OF EXCAVATION: 3/6/98  
 WATER LEVEL: DRY  
 LOGGED BY: RC  
 APPROVED BY:

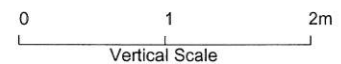
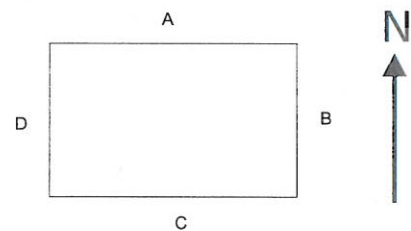
### SIDE ELEVATIONS



### SIDE C



### PLAN



### Key:

- \* Soil Sample location
- WA Water Sample
- HS Headspace Analysis
- ⇒ Water Ingress

| STRATA DESCRIPTIONS                                                                                                                                                                                                                           | COMMENTS | SAMPLES                                                                                                             |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------|---------------------------------------------------------------------------------------------------------------------|
| 1. Broken CONCRETE with some silt and rootlets (MADE GROUND)<br>2. Loose dark brown sandy GRAVEL with some ash and foundry slag (MADE GROUND)<br>Large cobbles of weathered bedrock from 0.7m<br>Trial pit terminated at 1.30 mbgl on refusal |          | <u>PID RESULTS</u><br>0.5m - 0.4 ppm<br>1.0m - 0.7 ppm<br>1.3m - 0.8 ppm<br><br><u>SOIL SAMPLES</u><br>MSTP126-1.3m |

|                                                                                                                |                                  |       |
|----------------------------------------------------------------------------------------------------------------|----------------------------------|-------|
| Job Title:                                                                                                     | SOIL & GROUNDWATER INVESTIGATION |       |
| Location:                                                                                                      | LLANDARCY REFINERY               |       |
| Client:                                                                                                        | BP LLANDARCY                     |       |
| Job No:                                                                                                        | 39991-001-401                    | DRAFT |
|  <b>DAMES &amp; MOORE</b> |                                  |       |