**Inspection and test plan – Oily water (pipe laying)**

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| **Project no.** | CC0375 | | **Project name** | Hunter Power Project | | | | | | **Date** |  |
| **Symal ITP no.** | | CC0375-ITP-004 | **Revision no.** | 6 | **Revision date** | 01/02/2023 | **Plant and equipment used** | |  | | |
| **UGL ITP no.** | | 3200-0663-HPP-QA-ITP-005 | | | | | **SHL ITP no.** | HPP-UGL-QUA-GN-GEN-ITP-0005 | | | |
| **Lot no.** | |  | **Location (chainages, detailed description or marked up plan)** | | | | |  | | | |

Attach Dockets, Certificates and QA Documents to ITP

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| Contact Details | | Summary of Requirements | | | Principle Codes / Standards | | Records | |
| **Customer:**  **Construction Manager:**  **Project Engineer:**  **Quality Representative:**  Subcontractors    Surveillance / Inspection Key  **HOLD POINT (H):** Nominated point beyond which work shall not proceed without verified acceptance by nominee.  **WITNESS POINT (W):** Points at which the nominee shall be notified and invited to witness an activity, but further work may proceed without the presence of the nominee.  **SURVEILLANCE (S): Continuing** evaluation of the status of methods, analysis of records and monitoring of activities on a random basis to ensure quality requirements will be met.  **VISUAL (V): 100**% Visual Inspection of work / item to ensure compliance with code / specification.  **DIMENSIONAL (D): Measurement** of critical dimensions to ensure work / item is within tolerance. | | **Process Qualifications**  **Traceability:**  Material:  Alloy Verification  Heat Treatment:  Pressure Testing  Consumable:  NDT:  Welder ID:  WPS:  Electrical:  Instruments  **Heat Treatment:**  **Dimensional Control:**  **Testing (NDT):**  **Acceptance Specification:**  **Pressure Testing:**  **Elect. / Instrumentation:**  Notes: | | | **Client Specifications**  HPP-AEC-CIV-GN-GEN-SPT-0161\_0 QUALITY (CONSTRUCTION)  HPP-AEC-CIV-DD-SWS-SPT-1351\_0 STORMWATER DRAINAGE (CONSTRUCTION)  HPP-AEC-CIV-DD-SWS-SPT-1352\_0 PIPE DRAINAGE  **Engineering Procedures / WI** | | **(MDR Insert as marked 3 )**   * Inspect Release Certs. * Deviations/Concessions * Material Certificates * Conformance Certificate * Welding Records * Welder Qual. Register * NDT Reports * Report on Repairs * Heat Treatment Records * Dimensional Records * Non-Conformance Rpts * Pressure Test Records * Drawings & Data Sheets * Misc Verification Records * Electrical Test Sheets | |
| Prepared by: | Steven Lee | | Date: 01/02/23 | Approved By: Joshua Fisicaro | | Date: 01/02/23 | |  |

|  | |  | |  |  |  | **Verification of acceptance by** | | | | | | **Remarks / record (eg. test frequency, reports, certificates, checklist etc)** | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | |  | |  |  |  | **Symal** | | **UGL** | | **SHL** | |
| **Item no.** | | **Activity** | | **Ref docs** | **Acceptance criteria** | **Acceptance** | **Key** | **Sign date** | **Key** | **Sign date** | **Key** | **Sign date** |
| **1.0 Preliminaries** | | | | | | | | | | | | | | |
| **1.1** | | Documentation | | Issued drawings / Site copy drawings | Check that you have the latest site and engineering drawings BEFORE starting each task/set of tasks. | Yes  No  N/A | S |  | S |  | S |  |  | |
| **1.2** | | Lot Traceability | | Spec. 0161 Quality [Cl 7.3] | Prepare a lot map for traceability of the work area. | Yes  No  N/A | S |  | S |  | S |  | Lot map | |
| **1.3** | | Drainage Pipe Material | | Drawings | Has the correct class & type of drainage structure been supplied and free of defects? | Yes  No  N/A | S |  | S |  | S |  | Material conformance certificate | |
| **1.4** | | Embedment material | | Spec. 1352 Pipe Drainage [Cl 5.1] | Material has plasticity index less than 6. | Yes  No  N/A | S |  | S |  | S |  | Delivery dockets  Test reports | |
| **1.5** | | Underlying Lot Conformance | | Underlying Lot ITP | Underlying services and/or assets have been installed prior to commencing works over and/or above.  Refer underlying lot ITP(s) | Yes  No  N/A | S |  | S |  | S |  |  | |
| **1.6** | | Temp. drainage during construction | | Spec. 1351 Stormwater Drainage [Cl 2.1] | Adequate provision for runoff flows at drainage works under construction implemented and in good repair. | Yes  No  N/A | S |  | S |  | S |  |  | |
| **1.7** | | Set out | | Spec. 1351 Stormwater Drainage [Cl 2.2]  Drawings | Setout Culvert inlet/outlet and drainage structure positions to the location and levels on the drawings. This shall be presented for inspection by the superintendent. | Yes  No  N/A | S |  | S |  | S |  |  | |
| **2.0 Excavation and Pipe Laying** | | | | | | | | | | | | | | |
| **2.1** | | Excavation | | Spec. 1352 Pipe Drainage [Cl 5.1, 5.2] | **DICL and Plastic Pipe:** | Yes  No  N/A | S |  | S |  | S |  |  | |
| **2.2** | | Unsuitable Material | | Spec. 1351 Stormwater Drainage [Cl 2.3] | Any Unsuitable Material to be removed to the depth as directed by the Superintendent  **Notice: Prior to Placing Bedding**  **HOLD POINT** | Yes  No  N/A | **H** |  | **H** |  | **H** |  |  | |
| **2.3** | | Compaction – Foundation | | Spec. 1351 Stormwater Drainage [Cl 2.5] | Trench foundation (including any unsuitable replacement) to be compacted to a relative compaction of 95% to a depth of 150mm below foundation level | Yes  No  N/A | S |  | S |  | S |  | Test reports | |
| **2.4** | | Compaction – Embedment material | | Spec. 1352 Pipe Drainage [Cl 5.1, 5.4] | **DICL and Plastic Pipe:**  **Bedding:**  Required relative compaction in the bedding zone shall be 95% (AS 1289.5.4.1 Standard Compaction)  *Layers not to exceed* ***150mm*** *compacted thickness.* | Yes  No  N/A | S |  | S |  | S |  | Test reports | |
| **2.5** | | Pipe Laying,  Pipe Joints and Protective Coating | | Drawings  Manufacturer Specifications | Have correct pipes (size and type) been laid and jointing installed as per manufacturer specifications  Pipe joints installed and torqued as per drawings and manufacturers specifications.  Protective coating on pipes applied as per manufacturers specifications.  **HOLD POINT** | Yes  No  N/A | **H** |  | **W** |  | **W** |  | Flange connection and protective coating check sheets | |
| **3.0 Filling and Compaction** | | | | | | | | | | | | | | |
| **3.1** | | Compaction – Embedment material | | Spec. 1352 Pipe Drainage [Cl 5.1, 5.4] | **DICL and Plastic Pipe:**  **Side and Overlay:**  Required relative compaction in the side and overlay zone shall be 70% for trafficable areas and 60% for non-trafficable areas (AS 1289.5.4.1 Standard Compaction)    *Layers not to exceed* ***150mm*** *compacted thickness.* | Yes  No  N/A | S |  | S |  | S |  | Test reports | |
| **3.2** | | Compaction – General Fill | | Spec. 1352 Pipe Drainage [Cl 5.4] | For sections of the trench above the overlay zone; backfill with general fill if in verges, medians or greater than 1.5m from top of pavement.  Minimum relative compaction to be 92% | Yes  No  N/A | S |  | S |  | S |  | Test reports | |
| **3.3** | | Compaction – Select Fill | | Spec. 1352 Pipe Drainage [Cl 5.4] | For sections of the trench above the overlay zone and within 1.5m of top of pavement; backfill with Select fill.  Minimum relative compaction to be 97%  *Layers not to exceed* ***150mm*** *compacted thickness.* | Yes  No  N/A | S |  | S |  | S |  | Test reports | |
| **3.4** | | Moisture Content | | Spec. 1352 Pipe Drainage [Cl 5.4] | Moisture Content for Backfill material to be within 60% to 95% OMC unless otherwise approved by Superintendent | Yes  No  N/A | S |  | S |  | S |  | Test reports | |
| **4.0 Conformance Check** | | | | | | | | | | | | | | |
| **4.1** | | Survey Report | | Spec. 0161 Quality [Cl 3.13]  RFI-026 | An as-built survey of the drainage system been completed to ensure all structures are within construction tolerances.  Plan: +/- 200mm  Level: +/- 20mm  **HOLD POINT** | Yes  No  N/A | **H** |  | **W** |  | **W** |  | Survey Report | |
| **4.2** | | Acceptance and closure of non-conforming items | | Spec. 0161 Quality [Cl 3.8] | NCRs to be opened for non-conforming items and closed prior to closing construction lot. **HOLD POINT** | ☐ Yes ☐ No ☐ N/A | **H** |  | **H** |  | **H** |  |  | |
|  |  | | **Comments**: | | | | | | | | | | |  |
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| **Acceptance of works:** | | | | |  | |
| Symal Infrastructure representative name |  |  | Symal Infrastructure representative signature |  | Date |  |
| UGL representative name |  |  | UGL representative signature |  | Date |  |
| SHL representative name |  |  | SHL representative signature |  | Date |  |

**Inspection Checklist Report**

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| **Project no.** | CC0375 | **Project name:** | Hunter Power Project | | **Date:** |  |
| **Symal ITP no.** | CC0375-ITP-004 | | | | | |
| **UGL ITP no.** | 3200-0663-HPP-QA-ITP-005 | | **SHL ITP no.** | | HPP-UGL-QUA-GN-GEN-ITP-0005 | |
| **Symal Lot no.** | ITP04-001 | | | | **Symal Sub Lot no.** |  |
| **Location (chainages, detailed description or marked up plan)** | | | | Oily Water Line | | |

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|  | | **Verify of acceptance by** | | | | | | | | | **Remarks / records** |
|  | | **Symal** | | | **UGL** | | | **SHL** | | |
| **78yID No.** | **Activity to be verified** | **ITP Step No.** | **Items conforms?** | | | **NCR / Test Report No.** | | **Key** | | **Sign Date** | **Key** | | **Sign Date** | **Key** | | **Sign Date** |  | |
| Yes | No | NA |
| **Preliminaries** | | | | | | | | | | | | | | | | | | |
| 1. | Documentation | 1.1 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| 2. | Lot Traceability | 1.2 |  |  |  |  | | S | |  | S | |  | S | |  | Lot map | |
| 3. | Drainage Pipe Material | 1.3 |  |  |  |  | | S | |  | S | |  | S | |  | Material conformance certificate | |
| 4. | Embedment material | 1.4 |  |  |  |  | | S | |  | S | |  | S | |  | Delivery dockets  Test reports | |
| 5. | Underlying Lot Conformance | 1.5 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| 6. | Temp. drainage during construction | 1.6 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| 7. | Set out | 1.7 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| **Excavation and Pipe Laying** | | | | | | | | | | | | | | | | | | |
| 8. | Excavation | 2.1 |  |  |  |  | | S | |  | S | |  | S | |  |  | |
| 9. | Unsuitable Material  **HOLD POINT** | 2.2 |  |  |  |  | | **H** | |  | **H** | |  | **H** | |  |  | |
| 10. | Compaction – Foundation | 2.3 |  |  |  |  | | S | |  | S | |  | S | |  | Test reports | |
| 11. | Compaction – Embedment material | 2.4 |  |  |  |  | | S | |  | S | |  | S | |  | Test reports | |
| 12. | Pipe Laying,  Pipe Joints and Protective Coating  **HOLD POINT** | 2.5 |  |  |  |  | | **H** | |  | **W** | |  | **W** | |  | Flange connection and protective coating check sheets | |
| **Filling and Compaction** | | | | | | | | | | | | | | | | | | |
| 13. | Compaction – Embedment material | 3.1 |  |  |  |  | | S | |  | S | |  | S | |  | Test reports | |
| 14. | Compaction – General Fill | 3.2 |  |  |  |  | | S | |  | S | |  | S | |  | Test reports | |
| 15. | Compaction – Select Fill | 3.3 |  |  |  |  | | S | |  | S | |  | S | |  | Test reports | |
| 16. | Moisture Content | 3.4 |  |  |  |  | | S | |  | S | |  | S | |  | Test reports | |
| **Conformance Check** | | | | | | | | | | | | | | | | | | |
| 17. | Survey Report  **HOLD POINT** | 4.1 |  |  |  |  | | **H** | |  | **W** | |  | **W** | |  | Survey Report | |
| 18. | Acceptance and closure of non-conforming items **HOLD POINT** | 4.2 |  |  |  |  | | **H** | |  | **H** | |  | **H** | |  |  | |

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| I certify that this Lot conforms to the requirements of the design and specifications; that all associated NCRs have been closed out: and all survey, conformance testing and inspections have been undertaken in accordance with the specified requirements. | | | | |
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| **Symal Representative** |  | **Signature** |  | **Date** |
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| **UGL Representative** |  | **Signature** |  | **Date** |
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| **SHL Representative** |  | **Signature** |  | **Date** |
| **Comments:** | | | | |
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