

Inspection and test plan – earthing installation

Project no. CC0398 **Project name** VIVA Energy ULSG **Approved by** Ari Birch
ITP no. ITP037 **Revision no.** C **Revision date** 24/04/2024 **Plant and equipment used** Excavators, Bobcats, Moon Buggy, Watercart
Lot no. _____ **Estimated qty** _____ **Location (chainages, detailed description or marked up plan)** _____

Attach Dockets, Certificates and QA Documents to ITP

					Verify or test by				Remarks / record (eg. test frequency, reports, certificates, checklist etc)
					Symal Infrastructure		VIVA		
Item no.	Activity	Ref docs	Acceptance criteria	Frequency	Key	Sign date	Key	Sign date	
1.0 Pre-start activities									
1.1	Set out	Composite Drawings	Is the position of the pipe in accordance with the drawings? IFC and latest available revision used?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	H		W		
1.2	IFC Submission & Approval	Composite Drawings	Is IFC Construction Drawing and Most Current Revision Approved by the client?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	H		H		
1.3	Permits	Symal Safety Procedure	Have the below permits been created. -GPP -Working at Heights -Hot Works -Confined Space	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	H		W		
1.4	Determine Lot Size		What is the lot size?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	S		W		
1.5	Materials		Have the provided materials been accepted, and checklist completed? Have the materials and tag numbers/heat numbers been verified?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	W		W		<input type="checkbox"/> Material Inspection Checklist
1.6	Electrical and Earthing Pre-Qualification	Welder Qualifications and tickets. This ITP	Welding procedures, equipment to be used, welding qualifications and calibration of welding machines to be submitted and approved by the client, has this been completed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	H		H		<input type="checkbox"/> Calibration Certificates
1.7	Bedding and Backfill Materials Approval		Has bedding and backfill materials been approved for use?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	H		H		<input type="checkbox"/> Material Approval



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2.0 Excavation and Bedding									
2.1	Service Location	DBYD & Services marked on current IFC drawings (if applicable)	Current DBYD documents received and works executed by qualified service locator	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	H		S		
2.2	Excavation	235929-000- CV-SP- 00002 EARTHWOR KS	Trench depth into buried ground 500mm width to provide sufficient width for earthing to reach design depth. Earthworks for trenches shall be done in accordance with standard drawing, has this been completed?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	W		S		
3.0 Laying/Welding/Handover									
3.1	Earthing Installation	Viva Energy Earth Grid Connection Checklist (001) - ITP	Have works been undertaken as per the subcontractor's checklist?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	H		W		
3.2	VIVA electrical inspection	New Item	Has the electrical inspector from VIVA been notified to attend the project site and review the installed earthing?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	H		W		
3.3	Earthing Network	239529-CO- FM-00003 – Electrical Earthing by Area	<input type="checkbox"/> Has earth Grid installed at correct depth of cover? <input type="checkbox"/> Have earth rods/connections/ferrules are of the correct type, length and material and located as per the approved drawing? <input type="checkbox"/> Has the cleanness and secureness of all earth rods/connections/ferrules been checked?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	W		H		<input type="checkbox"/> Earth Grid Connection Checklist (Rev 1)



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			<div><input type="checkbox"/> Are all identification labels being correctly fixed and visible?</div> <div><input type="checkbox"/> Are all cable clamps are secured correctly, coated with anti-corrosive coating?</div> <div><input type="checkbox"/> Are all cables of the correct size and type?</div> <div><input type="checkbox"/> Are all exothermic welds being acceptable?</div> <div><input type="checkbox"/> Has the individual earth path / bar resistance been recorded?</div> <div><input type="checkbox"/> Has the overall grid earth path resistance been recorded?</div> <div><input type="checkbox"/> Has the anti-corrosion material been applied?</div> <div><input type="checkbox"/> Have 3.0m tails been extended as per the project requirements</div>						
3.4	Electrical Earthing by Area	<div>235929-CO-FC-000034 – Electrical Earthing by Area</div> <div>VIVA Energy Earth Grid Connection Checklist</div>	<div>Has the equipment earthing in area earthed via earth bosses or studs been installed as approved installation drawings and specification?</div> <div>Have all earth bosses and studs been tightly fitted with shake proof washers and coated with project specified protection?</div> <div>Are all earthing conductors correct type and size not less than minimum size specified in approved installation drawings?</div> <div>Are all earthing conductors properly installed and protected?</div>	<div><input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A</div>	H		H		Testing Checklist



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			Has earth resistivity testing been completed? Structure Steelwork Earthing: Has all structural steelwork that is bolted and provided with equipment earth bonding connected to the main earthing system where required? Have all earth Bosses/Earth Points been cleared paint /rust free prior to connection?						
3.5	Backfill	235929-000-CV-SP-00002 EARTHWORKS	Has backfill been completed to provide a compact and even surface? Has testing been completed prior to backfill? Has all third party inspections been completed prior to backfilling?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	S		W		
3.6	Clean-up of site	235929-000-CV-SP-00002 EARTHWORKS	Have the areas affected by the works been restored to a condition similar to that which existed prior to the commencement of the work?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	S		S		
3.7	Identification and recording		Have the actual installed location and depth of the earthing, and location of pits, been accurately recorded on an as built?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	H		H		<input type="checkbox"/> As built
3.8	Work is complete and complies with design plans / drawings / specs		Redline mark-ups As-Built Survey: Earthing to conform to the required depths and locations.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	H		H		<input type="checkbox"/> As built
3.9	Certificate of electrical safety		Electrician to supply Certificate of electrical safety for earthing installation	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> N/A	H		H		Certificate of electrical safety



Works complete (signed SS)	_____	Date works complete	_____
Lot conforms (signed PE)	_____	Date lot closed	_____
NCR(s) no. raised	_____	Date NCR closed for this lot	_____

Responsibility (Resp.) Key: PM-Project Manager, SPE-Senior Project Engineer, SE- Site Engineer, SS-Site Supervisor, SV-Surveyor

Lot acceptance:

Symal Infrastructure representative name	_____	MDR representative name	_____
Symal Infrastructure representative signature	_____	MDR representative name	_____

Inspection key: **W** – Witness, **H** – Hold Point, **S** - Surveillance