

Notice of variation with introductory note

The Environmental Permitting (England & Wales) Regulations 2010

Future Industrial Services Limited

Acornfield Road Waste Management Centre

Acornfield Road

Knowsley Industrial Estate

Kirkby

Knowsley

L33 7UF

Variation application number

EPR/VP3936UG/V007

Permit number

EPR/VP3936UG

Acornfield Road Waste Management Centre

Permit number EPR/VP3936UG

Introductory note

This introductory note does not form a part of the notice

The following notice gives notice of the variation of an environmental permit.

This variation makes the following changes to the oil recovery unit:

- removal of the solvent extraction system and zeolite column oil cleaning system,
- addition of a hydro treatment process to produce Grade 1 or 2 base lube. The process incorporates a nitrogen generation plant, amine hydrogen gas recovery plant and hydrogen storage system and an emergency flare,
- installation of a fractionation column to separate light oil components.

The installation will continue to operate as follows:

The site is situated in Knowsley Industrial Estate. The surrounding land to the north and west has a variety of industrial uses. To the east of the site the land is used for agriculture, while to the south is an area of woodland known as Charley Wood and beyond that is a nature reserve known as Acornfield Plantation.

There has been historical contamination of the site and the operator is carrying out a programme of groundwater monitoring as agreed in writing with the Environment Agency.

The installation contains a number of waste treatment/handling activities, namely:

Alkaline Powder Recycling

The alkaline powdered waste undergoes a treatment process which converts the waste to synthetic gypsum for use in the cement manufacturing industry. The waste is mixed with water at a ratio of 5:1 to remove the sodium and potassium salts and then passed through a centrifuge. The resultant slurry from the centrifuge is then pH-adjusted with sulphuric acid, which creates the calcium sulphate (gypsum). Once the mixture has been pH-adjusted it is passed through a filter press and the filter cake removed to a covered storage area.

Hazardous Waste Transfer Station

Mixed containerised hazardous waste will be segregated upon arrival at the installation and stored in the relevant storage bay. After analysis by a suitably qualified chemist the waste will be routed for treatment on site or for third party recovery treatment or disposal.

Oil/Water Separation

The oil/water waste will be stored in a designated storage area and will undergo separation so that the oil can be sent offsite for recovery and/or disposal. The oil may also be recovered onsite by the Oil Recovery Unit.

Solvent Bulking

Waste solvents will be blended and mixed in a designated storage area. The storage tanks will be connected to a mobile Granular Activated Carbon (GAC) unit.

Tanker Dig Out Facility

Solid residues from road tanker barrels will be manually dug out to a dedicated storage tank. The residue will be pumped to a series of settlement troughs. The settled sludge will be passed through a filter press, prior to transfer offsite for disposal. The resultant filter cake will be transferred to a skip for off-site disposal or recovery. The filtrate discharges to a process drain for treatment in the pH adjustment plant.

Aqueous Bulk Plant

This will consist of a series of bunded bulk storage tanks for the storage of liquid hazardous wastes, prior to treatment in the treatment processes described previously.

pH Adjustment Plant

Aqueous waste streams will be stored in a designated storage area, where pH adjustment will be undertaken and followed by settlement of solids in a clarifier. The sludge removed from the clarifier will be passed through a filter press, prior to transfer off site for disposal. Following treatment, the wastewaters will be discharged to the public foul sewer for further treatment at the Fazakerly sewage treatment works in compliance with the Trade Effluent Consent issued by United Utilities plc. Where necessary, aqueous wastes can be treated via the GAC unit to remove organic contaminants.

Oil Recovery Unit

This is a distillation process having a capacity of 6 m³/hr, consisting of a flash evaporator, two wiped film evaporators, a hydrotreatment process incorporating an amine hydrogen recovery unit, nitrogen generation plant and a hydrogen storage system to produce Grade 1 or 2 base lube. The light distillate fraction will be burned in a co-incinerator plant which provides heat for the distillation process. The middle fractions will be recovered for lube oil production and the asphalt fraction will be disposed of at a suitable off site facility.

The principal point source emissions to air from the installation have been identified as the following: hydrochloric acid storage tank; alkaline powder plant and sulphuric acid storage tanks; thermal oxidiser stack, oil water storage/blending tanks, solvent storage/blending tanks, the pH adjustment plant and emergency flare. Abatement is provided, including scrubbers and carbon filters, to minimise the emissions from these sources. The installation has one emission point through which the operator discharges effluent to public sewer.

This permit controls the operation of the waste co-incineration plant which forms part of the Oil Recovery Unit. A small waste incineration plant means a waste incineration plant or waste co-incineration plant with a capacity of less than or equal to 10 tonnes per day for hazardous waste or 3 tonnes per hour for non-hazardous waste.

Sludge Bulking and Recovery

This will consist of storage, sorting, repacking and bulking of hazardous sludges and filter cakes destined for recovery (typically oily filter cakes from centrifuge filter pressing and effluent treatment plant sludges) in order to allow bulking for transportation and the conditioning of physical properties including the addition of lime.

The permit implements the requirements of the EU Directives on Industrial Emissions and Waste.

The operator has an Environmental Management System certified to the ISO14001 standard.

The schedules specify the changes made to the original permit.

The status log of a permit sets out the permitting history, including any changes to the permit reference number.

Status log of the permit		
Description	Date	Comments
Application VP3936UG	Duly made 31/08/07	-
Additional information requested	25/01/08	05/02/2008, 22/02/2008, 07/03/2008 and 20/03/2008
Additional information requested	14/04/08	15/04/2008, 18/04/2008 and 01/05/2008
Additional information requested	21/04/08	24/04/2008
Additional information requested	29/04/08	01/05/2008
Additional information requested	22/05/08	17/06/2008
Additional information received	15/08/08	-

Status log of the permit		
Description	Date	Comments
Permit VP3936UG determined	19/09/08	-
Application EPR/VP3936UG/V002	Duly Made 27/07/09	-
Schedule 5 Notice	Submitted 28/10/09	Received 05/02/2010
Schedule 5 Notice	Submitted 08/12/09	Received 05/02/2010
Variation issued	14/04/10	Variation issued
Variation Notice EPR/VP3936UG/V003	Issued 07/02/14	Variation Notice EPR/VP3936UG/V003
Application EPR/VP3936UG/V004 (variation)	Duly made 26/08/14	Application to add new boiler plant.
Variation determined EPR/VP3936UG/V004 (PAS/Billing reference: XP3333WW)	12/09/14	Varied permit issued.
Application EPR/VP3936UG/V005	07/10/14	Application withdrawn.
Application EPR/VP3936UG/V006	09/12/14	Application to add oil distillation plant and to increase the capacity of the waste transfer station and oil/water treatment plant.
Additional information received Schedule 5 Notice	17/02/15	Response to Schedule 5 Notice dated 04/02/2015
Additional information received	03/03/15	
Variation determined	23/03/15	Consolidated and varied permit issued.
Application EPR/VP3936UG/V007 (variation and consolidation)	Duly made 29/07/15	Application to remove solvent extraction system and zeolite column and to add hydro treatment process. Application received - 08/06/2015. Not duly made response received - 20/07/2015. Full payment received – 29/07/15
Additional information received	25/08/15	Response to request for information on hydrogen sulphide & ammonium hydrosulphide levels & noise levels.
	16/09/15	Response to Schedule 5 Notice dated 28/08/15
Variation determined EPR/VP3936UG/V007 (Billing ref: UP3931AP)	26/10/15	Varied permit issued.

End of introductory note

Notice of variation

The Environmental Permitting (England and Wales) Regulations 2010

The Environment Agency in exercise of its powers under regulation 20 of the Environmental Permitting (England and Wales) Regulations 2010 varies

Permit number

EPR/VP3936UG

Issued to

Future Industrial Services Limited (“the operator”)

whose registered office is

**Image Business Park
Acornfield Road
Knowsley Industrial Estate
Kirkby
Liverpool
L33 7UF**

company registration number 03734986

to operate a regulated facility at

**Acornfield Road Waste Management Centre
Acornfield Road
Knowsley Industrial Estate
Kirkby
Knowsley
L33 7UF**

to the extent set out in the schedules.

The notice shall take effect from 26/10/2015

Name	Date
Claire Roberts	26/10/2015

Authorised on behalf of the Environment Agency

Schedule 1 – conditions to be deleted

None

Schedule 2 – conditions to be amended

The following conditions are amended as a result of the application made by the operator

Table S1.1 as referenced in condition 2.1.1 has been amended to add directly associated activities (DAAs) for emergency flare, nitrogen generation plant, hydrogen gas storage and amine hydrogen recovery unit.

Table S1.1 activities			
Activity Reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
A1	Section 5.6 A(1)(a)	<p>Temporary storage of hazardous waste with a total capacity exceeding 50 tonnes.</p> <p>D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where the waste is produced).</p> <p>R13: Storage of waste pending any of the operations numbered R1 to R 12.</p> <p>Storage of hazardous filter cake and sludges pending disposal D1 to D12 or recovery R1 to R13.</p>	<p>Hazardous Wastes as listed in Table S2.2, column 1, marked 'X'.</p> <p>Containerised wastes stored in the Waste Transfer Station as shown on drawing "Plan View v1.9 in appendix I". Maximum storage capacity: 2,458 tonnes.</p> <p>Bulk Hazardous Wastes stored in tanks as shown on drawing "Generic Tank Contents". Maximum storage capacities as detailed in Table "Tank Farm generic Contents" Maximum storage capacity 5549 tonnes</p> <p>Stored in Area 1, shown on Site Plan. Hazardous wastes as listed in Table S2.2 column 9, marked 'X' Maximum storage capacity 1000 tonnes</p>
A2	Section 5.3 A(1)(a)(iv)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving repackaging.</p> <p>R1, R3, R4 and R5.</p> <p>D14: Repackaging prior to submission to any of the operations numbered D1 to D13.</p>	<p>Repackaging of hazardous wastes undertaken in the Waste Transfer Station as shown on drawing Figure 1_Var.</p> <p>Hazardous Wastes as listed in Table S2.2 column 1, marked 'X'.</p>
A3	Section 5.3 A(1)(a)(iii)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving blending or mixing.</p> <p>R1, R3, R4 and R5.</p> <p>D13: Blending or mixing prior to submission to any of the operations numbered D1 to D12.</p>	<p>Blending or Mixing of solvents undertaken in the Solvent Bulking Plant (tanks T10, T11, T12 and T14 as shown on drawing Figure 1_Var), including the associated emission abatement and control equipment.</p> <p>Hazardous Wastes as listed in Table S2.2 column 6, marked 'X'.</p>

Table S1.1 activities			
Activity Reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
			Maximum treatment capacity: 100 tonnes/day.
A4	Section 5.3 A(1)(a)(iii)	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving blending or mixing. R3, R4 and R5. D13: Blending or mixing prior to submission to any of the operations numbered D1 to D12.	Blending or Mixing of wastes undertaken in the Aqueous Bulk Storage Facility (tanks T2, T3, T20 to T27 as shown on drawing Figure 1_Var). Hazardous Wastes as listed in Table S2.2 column 2, marked 'X'. Maximum treatment capacity: 500 tonnes/day.
A5	Section 5.3 A(1)(a)(ii)	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment. D9: Physico-chemical treatment not specified elsewhere which results in final compounds or mixtures which are disposed of by any of the operations numbered D1 to D12.	Treatment of hazardous wastes consisting of removal of contamination using GAC column. Treatment undertaken in the Aqueous Bulk Storage Facility as shown on drawing Figure 1_Var. Hazardous Wastes listed in Table S2.2 column 3, marked 'X'. Maximum treatment capacity: 60,000 tonnes/year.
A6	Section 5.4 A(1)(a)(ii)	Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving physico-chemical treatment. D9: Physico-chemical treatment not specified elsewhere which results in final compounds or mixtures which are disposed of by any of the operations numbered D1 to D12.	Treatment of non-hazardous wastes consisting of removal of contamination using GAC column. Treatment undertaken in the Aqueous Bulk Storage Facility as shown on drawing Figure 1_Var. Non-hazardous Wastes listed in Table S2.2 column 3, marked 'X'. Maximum treatment capacity: 50,000 tonnes/year.
A7	Section 5.3 A(1)(a)(ii)	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment. D9: Physico-chemical treatment not specified elsewhere which results in final compounds or mixtures which are disposed of by any of	Treatment of hazardous wastes consisting of pH adjustment. Treatment undertaken in the pH Adjustment Plant (tanks T4, T5, and T6 as shown on drawing Figure 1_Var), including the associated emission abatement and control equipment. Hazardous Wastes listed in Table S2.2 column 2, marked 'X'.

Table S1.1 activities			
Activity Reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
		the operations numbered D1 to D12.	Maximum treatment capacity: 1,200 tonnes/day.
A8	Section 5.4 A(1)(a)(ii)	<p>Disposal of non-hazardous waste with a capacity exceeding 50 tonnes per day involving physico-chemical treatment.</p> <p>D9: Physico-chemical treatment not specified elsewhere which results in final compounds or mixtures which are disposed of by any of the operations numbered D1 to D12.</p>	<p>Treatment of non-hazardous wastes consisting of pH adjustment.</p> <p>Treatment undertaken in the pH Adjustment Plant (tanks T4, T5, and T6 as shown on drawing Figure 1_Var), including the associated emission abatement and control equipment.</p> <p>Non-hazardous Wastes listed in Table S2.2 column 2, marked 'X'.</p> <p>Maximum treatment capacity: 1,200 tonnes/day.</p>
A9	Section 5.3 A(1)(a)(ii)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.</p> <p>D9: Physico-chemical treatment not specified elsewhere which results in final compounds or mixtures which are disposed of by any of the operations numbered D1 to D12.</p> <p>R3: Recycling/reclamation of organic substances which are not used as solvents.</p>	<p>Phase separation of waste oils.</p> <p>Oil Water Plant (tanks O1, O2, O3 and O4) as shown on drawing Figure 1_Var), including the associated emission abatement and control equipment.</p> <p>Wastes listed in Table S2.2 column 5, marked 'X'.</p> <p>Maximum treatment capacity: 200 tonnes/day.</p>
A10	Section 5.3 A(1)(a)(iii)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving blending and mixing.</p> <p>D13: Blending or mixing prior to submission to any of the operations numbered D1 to D12</p> <p>R1: Use principally as a fuel or other means to generate energy</p> <p>R3: Recycling/reclamation of organic substances which are not used as solvents.</p> <p>R9: Oil re-refining or</p>	<p>Blending of waste oils.</p> <p>Oil Water Plant (tanks O1, O2, O3 and O4) as shown on drawing Figure 1_Var), including the associated emission abatement and control equipment.</p> <p>Wastes listed in Table S2.2 column 5, marked 'X'.</p> <p>Maximum treatment capacity: 200 tonnes/day.</p>

Table S1.1 activities			
Activity Reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
		other reuses of oil	
A11	Section 5.3 A(1)(a)(vi)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving recycling or reclamation of inorganic materials other than metals or metal compounds.</p> <p>R5: Recycling/ reclamation of other inorganic materials.</p>	<p>Recycling/reclamation of inorganic materials consisting of washing, dewatering, neutralisation and filtration of wastes to produce synthetic gypsum.</p> <p>Alkaline Powder Recycling Plant as shown on drawing Figure 1_Var including the associated emission abatement and control equipment.</p> <p>Including storage of wastes prior to treatment in Silos S1, S2, and storage of recovered gypsum as a directly associated activity.</p> <p>Wastes listed in Table S2.2 column 4, marked 'X'.</p> <p>Maximum treatment capacity: 150 tonnes/day.</p>
A12	Section 5.3 A(1)(a)(x)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving oil re-refining or other reuses of oil.</p> <p>R 1 Use principally as a fuel or other means to generate energy</p> <p>R 2 Solvent reclamation/regeneration</p> <p>R3: Recycling/ reclamation of organic substances which are not used as solvents.</p> <p>R 9 Oil re-refining or other reuses of oil</p>	<p>Recovery of waste oil in the Oil Recovery Unit (ORU). Including storage of waste prior to treatment in the West tank farm and East tank farm.</p> <p>Maximum treatment capacity 45,000 tonnes per annum.</p> <p>Includes a Small Waste Incinerator Plant burning recovered light distillate to generate heat for the ORU, including the associated emission abatement and control equipment.</p>
A13	Section 5.3A(1)(a)(ii)	<p>Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment.</p> <p>R3: Recycling/ reclamation of organic substances which are not used as solvents.</p>	<p>Washing of waste containers containing hazardous residues undertaken in the Container Plant as shown on drawing Figure 1_Var, including the associated emission abatement and control equipment.</p> <p>Shredding of washed plastic, waste containers.</p> <p>Crushing of washed metal, waste containers.</p>

Table S1.1 activities			
Activity Reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
		R4: Recycling/ reclamation of metals and metal compounds.	Hazardous Wastes listed in Table S2.2 column 7, marked 'X'.
A14	Section 5.3A(1)(a)(ii)	Disposal or recovery of hazardous waste with a capacity exceeding 10 tonnes per day involving physico-chemical treatment. R3: Recycling/ reclamation of organic substances which are not used as solvents. R4: Recycling/ reclamation of metals and metal compounds R 1 Use principally as a fuel or other means to generate energy	Sludge bulking and treatment including treatment with lime, undertaken in the Waste Transfer Station shown in Plan view v1.9 in appendix 3. Hazardous Wastes listed in Table S2.2 column 9, marked 'X'. Capacity 7,500 tonnes per annum.
Directly Associated Activities			
A15	Washing and shredding or crushing of waste containers.	R3: Recycling/ reclamation of organic substances which are not used as solvents. R4: Recycling/ reclamation of metals and metal compounds.	Washing of waste containers containing non-hazardous residues undertaken in the Container Plant as shown on drawing Figure 1_Var, including the associated emission abatement and control equipment. Shredding of washed plastic, waste containers. Crushing of washed metal, waste containers. Non-Hazardous Wastes listed in Table S2.2 column 7, marked 'X'.

Table S1.1 activities			
Activity Reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
A16	Storage of wastes.	D15: Storage pending any of the operations numbered D1 to D14 (excluding temporary storage, pending collection, on the site where the waste is produced). R 13 Storage of wastes pending any of the operations numbered R 1 to R 12 (excluding temporary storage, pending collection, on the site where it is produced)	Storage of non-hazardous wastes residues prior to on-site treatment for disposal. Non Hazardous Wastes as listed in Table S2.2 column 1, marked 'X'. Containerised wastes stored in the Waste Transfer Station as shown on drawing Figure 1_Var. Maximum capacity: 540 tonnes. Bulk Non-hazardous Wastes stored in tanks as shown on drawing Figure 1_Var. Maximum storage capacities as detailed in Table B2.1.12(A) of the application.
A17	Storage of APC residues that have been converted to Synthetic Gypsum.	Storage of recovered Gypsum and or filter cake.	Product gypsum stored in a covered storage area in the Soil Treatment Area as shown on drawing Figure 1_Var. Maximum capacity: 600 tonnes.
A18	Tanker Washing.	D9: Physico-chemical treatment not specified elsewhere which results in final compounds or mixtures which are disposed of by any of the operations numbered D1 to D12.	Washing of residues from tankers after delivery of wastes.
A19	Steam supply	Gas oil fired boiler plant rated at ~1.3MW thermal input.	From receipt of gas oil at the installation to steam supply to waste oil tanks and emissions to air from boiler exhaust stack.
A20	Storage of filter cake and sludges	Storage of non-hazardous filter cake and sludges pending disposal D1 to D12 or recovery R1 to R13.	Maximum storage capacity 1000 tonnes. Storage undertaken in Area 1, shown on Site Plan.
A21	Flare	Combustion of off-gases from ORU in an emergency flare.	Combustion of off-gases from enclosed emergency relief vents on the hydrotreatment process and fractionation column during abnormal operation only.
A22	Nitrogen generation plant	Production of nitrogen for use as inert gas blanketing during ORU plant start-up and in vessels during normal operation.	Operation of air compressor, flow of compressed air through a Pressure Swing Absorption (PSA) array, separation of oxygen from nitrogen, venting of oxygen rich air and flow of nitrogen to hydrotreater plant for purification.
A23	Hydrogen gas and amine solution storage	Delivery and storage of hydrogen gas in onsite storage trailer and	Storage of hydrogen gas and amine solution for use in the hydrotreatment system.

Table S1.1 activities			
Activity Reference	Activity listed in Schedule 1 of the EP Regulations	Description of specified activity	Limits of specified activity
		storage of amine solution in IBC.	Maximum storage capacity (static & trailer storage) for hydrogen gas shall not exceed 0.72 tonnes at any one time. No more than 1 tonne of amine solution shall be stored on site at any one time.
A24	Amine hydrogen recovery unit	Regeneration of amine solution in the amine regenerator column.	From receipt of the recycle gas from the cold high pressure separator, absorption of hydrogen sulphide from the sour gas in a column with amine solution to return of hydrogen sulphide free-gas to the suction of the recycle compressor.

Table S1.2 as referenced in condition 2.3.1 and 2.3.2 has been amended to incorporate operating techniques for emergency flare, nitrogen generation plant, hydrogen gas storage and amine hydrogen recovery unit.

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application VP3936UG	The responses to sections 2.1 and 2.2 in the Application, excluding the responses given in the following: 'Document Reference B1.4 Technical Description of Activities' 'Document Reference B2.1 In-process Controls' 'Document Reference B2.1.1 Appendix 1 List of EWC Codes' 'Document Reference B2.11 Closure' 'Document Reference B2.2 Emissions Control and Abatement' 'Figure 1' 'Figure 2' 'Figure 3'.	31/08/2007
Schedule 4 Notice Request dated 25/01/2008.	The responses to questions 1 to 20, excluding the following: 'Document Reference B2.1 In-process Controls' 'Document Reference B2.1.1 Appendix 1 List of EWC Codes' 'Document Reference B2.2 Emissions Control and Abatement' 'Figure 4' 'Figure 5' 'Figure 8'.	05/02/2008, 22/02/2008, 07/03/2008 and 20/03/2008
Request for information dated 14/04/2008.	The responses to the letter, excluding the following: Document Reference B2.1.1 Appendix 1 List of EWC Codes' 'Document Reference B2.1 In-process Controls' 'Figure 4' 'Figure 5' 'Figure 8'.	14/04/2008, 18/04/2008 and 01/05/2008
Request for information dated 21/04/2008.	The responses to questions 1, 2, 4 and 5 excluding the following: 'Document Reference B2.1 In-process Controls'.	24/04/2008
Request for information dated 29/04/2008.	All parts.	01/05/2008
Request for information dated 22/05/2008.	All parts.	17/06/2008
Application EPR/VP3936UG/V002	The responses to Appendix A, sections 2.1 and 2.2 in the Application, excluding the responses given in the following: 'Section 2.1 – soil treatment and transfer area' 'Document Reference B2.1.1 Appendix C List of EWC Codes'.	27/07/2009
Request for information dated 28/10/2009.	The responses to items 1 to 18 and Appendices A to F, excluding the following: 'Item 2' 'Item 4' to 'Item 11' 'Item 13' to 'Item 14' 'Appendix F'.	05/02/2010
Request for information dated 08/12/2009.	The responses to items 1 to 10, excluding the following: 'Item 3' to 'Item 10'.	05/02/2010

Table S1.2 Operating techniques		
Description	Parts	Date Received
Application for variation, reference EPR/VP3936UG/V004.	Application forms C2 and C3 and supporting documentation.	26/08/2014
Application for variation, reference EPR/VP3936UG/V006.	Application forms C2 and C3 and supporting documentation.	09/12/2014
Request for information dated 04/02/2015.	The responses to items 1 to 9.	17/02/2015
Application EPR/VP3936UG/V007	Section 1 of Hydrogenation Plant Permit Variation document (June 2015) in response to section 5c - non-technical summary, Part C2 of the application form. Appendix C, Accident Management Plan and H1 Environmental Risk Assessment, in response to section 6 - Environmental risk assessment, Part C2 of the application form. Sections 3 to 7 of Hydrogenation Plant Permit Variation document (June 2015) in response to sections 3 to 6 of the application form, Part C3. Odour management plan version 2.	08/06/2015
	Update to the accident management plan table 1-7. Additional information on: <ul style="list-style-type: none"> • raw material storage and • operation of emergency flare. 	20/07/2015
Additional information	Response to the question on noise level.	25/08/2015
Schedule 5 Notice response	Response to question on: <ul style="list-style-type: none"> • hydrogen sulphide and ammonium hydrosulphide concentrations • monitoring of total sulphides, sulphate, ammonia and COD • reuse of recovered oil. 	16/09/2015

Table S1.3 as referenced in condition 2.4.1 has been amended by the removal of IC10

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
IC1	The Operator shall submit a written proposal to the Environment Agency to carry out tests to determine the size distribution of the particulate matter in the exhaust gas emissions to air from emission point A8, identifying the fractions within the PM ₁₀ , and PM _{2.5} ranges. The proposal shall include a timetable for approval by the Environment Agency to carry out such tests and produce a report on the results. On receipt of written agreement by the Environment Agency to the proposal and the timetable, the Operator shall carry out the tests and submit to the Environment Agency a report on the results.	Within 6 months of the completion of commissioning.
IC2	The Operator shall submit a written report to the Environment Agency on the commissioning of the Oil Recovery Unit. The report shall summarise the environmental performance of the plant as installed against the design parameters set out in the Application. The report shall also include a review	Within 4 months of the completion of commissioning.

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	of the performance of the facility against the conditions of this permit and details of procedures developed during commissioning for achieving and demonstrating compliance with permit conditions.	
IC3	The Operator shall carry out checks to verify the residence time, minimum temperature and oxygen content of the exhaust gases in the furnace whilst operating under the anticipated most unfavourable operating conditions. The results shall be submitted in writing to the Environment Agency.	Within 4 months of the completion of commissioning.
IC4	The Operator shall submit a written report to the Environment Agency describing the performance and optimisation of the combustion settings to minimise oxides of nitrogen (NO _x) emissions within the emission limit values described in this permit with the minimisation of nitrous oxide emissions. The report shall include an assessment of the level of NO _x and N ₂ O emissions that can be achieved under optimum operating conditions. The report shall also provide details of the optimisation (including dosing rates) for the control of acid gases and dioxins.	Within 4 months of the completion of commissioning.
IC5	The Operator shall carry out an assessment of the impact of emissions to air of the following component metals subject to emission limit values, i.e. Cd, Tl, Hg, Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V. A report on the assessment shall be made to the Environment Agency. Emissions monitoring data obtained during the first year of operation shall be used to compare the actual emissions with those assumed in the impact assessment submitted with the Application. An assessment shall be made of the impact of each metal against the relevant EQS/EAL. In the event that the assessment shows that an EQS/EAL could be exceeded, the report shall include proposals for further investigative work.	15 months from commencement of operations
IC6	The Operator shall submit a written summary report to the Agency to confirm by the results of calibration and verification testing that the performance of Continuous Emission Monitors for parameters as specified in table S3.1 and table S3.1(a) complies with the requirements of BS EN 14181, specifically the requirements of QAL1, QAL2 and QAL3.	Initial calibration report to be submitted to the Agency within 3 months of completion of commissioning. Full summary evidence compliance report to be submitted within 18 months of commissioning.
IC7	The Operator shall submit the written protocol referenced in condition 3.2.3 for the monitoring of soil and groundwater for approval by the Environment Agency. The protocol shall demonstrate how the Operator will meet the requirements of Articles 14(1)(b), 14(1)(e) and 16(2) of the IED. The procedure shall be implemented in accordance with the written approval from the Agency.	15/03/2016
IC8	The operator shall submit to the Environment Agency for agreement a method statement detailing the proposed techniques for the repackaging of bulk wastes within the transfer station including repackaging of packages to bigger packages and packages to road tanker, in accordance with SGN	30/10/2015.

Table S1.3 Improvement programme requirements		
Reference	Requirement	Date
	S5.06. The procedure shall be implemented in accordance with the written agreement of the Agency.	
IC9	The operator shall submit to the Environment Agency for agreement a proposed method statement detailing the proposed techniques for handling waste laboratory smalls within the transfer station in accordance with SGN S5.06. The procedure shall be implemented in accordance with the written agreement of the Agency.	30/10/2015

Table S1.4 as referenced in condition 2.5.1 has been amended by replacing incorrect reference to Annex IV in PO4 with Annex V1 and adding PO8.

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
PO1	Prior to the commencement of commissioning of the Oil Recovery Unit, the Operator shall send a report to the Environment Agency which will contain a comprehensive review of the options available for utilising the heat generated by the waste incineration process in order to ensure that it is recovered as far as practicable. The review shall detail any identified proposals for improving the recovery and utilisation of waste heat and shall provide a timetable for their implementation.
PO2	Prior to the commencement of commissioning of the Oil Recovery Unit; the Operator shall provide a written commissioning plan, including timelines for completion, for approval by the Environment Agency. The commissioning plan shall include the expected emissions to the environment during the different stages of commissioning, the expected durations of commissioning activities and the actions to be taken to protect the environment and report to the Environment Agency in the event that actual emissions exceed expected emissions. Commissioning shall be carried out in accordance with the commissioning plan as approved.
PO3	After completion of furnace design and at least three calendar months before any furnace operation; the operator shall submit a written report to the Agency of the details of the computational fluid dynamic (CFD) modelling. The report shall demonstrate whether the design combustion conditions comply with the residence time and temperature requirements as defined by Chapter IV and Annex VI of the IED.
PO4	At least three months before operation of the Oil Recovery Unit, the Operator shall submit a written report to the Environment Agency specifying arrangements for continuous and periodic monitoring of emissions to sewer to comply with the requirements of Articles 8, 11 and Annex VI of the Industrial Emissions Directive. The report shall include the following: <ul style="list-style-type: none"> • Plant and equipment details, including accreditation to MCERTS (as appropriate) unless otherwise agreed in writing by the Environment Agency. • Methods and standards for sampling and analysis • Details of monitoring locations, access and working platforms
PO5	At least three months before operation of the Oil Recovery Unit, the Operator shall submit a written report to the Environment Agency specifying arrangements for continuous and periodic monitoring of emissions to air to comply with Environment Agency guidance notes M1 and M2. The report shall include the following: <ul style="list-style-type: none"> • Plant and equipment details, including accreditation to MCERTS • Methods and standards for sampling and analysis

Table S1.4 Pre-operational measures	
Reference	Pre-operational measures
	<ul style="list-style-type: none"> • Details of monitoring locations, access and working platforms.
PO6	The operator shall submit a report demonstrating that all bulk liquid storage tanks, pipelines and secondary containment have been leak-tested at least 4 weeks before the start of operations.
PO7	At least 3 months before commencement of sludge bulking and treatment activities in the waste transfer area the operator shall submit to the Environment Agency for agreement details of the proposed techniques together with BAT justification. The procedure shall be implemented in accordance with the written agreement of the Agency.
PO8	<p>At least 4 weeks prior to changing the existing use of Area 1 (shown on the site plan) from filtercake storage to other uses, the operator shall review and submit to the Environment Agency a written report providing detail of operations and infrastructure improvements of Area 1 that complies with the requirements of the Sector Guidance Note IPPC S5.06.</p> <p>The operator shall not change the use of Area 1 until all the improvements proposed by the operator and approved in writing by the Environment Agency have been implemented.</p>

Table S3.1 as referenced in condition 3.1.1 has been amended to add the emission point A19.

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method Note 1
A1 (Point A1 on drawing Figure 2_Var)	No parameters set	Scrubber T15 serving pH Adjustment Tank T4	No limit set	-	-	
A2 (Point A2 on drawing Figure 2_Var)	No parameters set	Scrubber T28 serving R1, R2 & T1	No limit set	-	-	
A3 (Point A3 on drawing Figure 2_Var)	No parameters set	Carbon filter T18 serving vessels T10, T11, T12 & T14	No limit set	-	-	Permanent sampling access not required.
A4 (Point A4 on drawing Figure 2_Var)	No parameters set	Carbon filter T17 serving vessels O1, O2, O3 & O4	No limit set	-	-	Permanent sampling access not required.
A5 (Point A5 on drawing Figure 2_Var)	No parameters set	Dust suppression unit serving silos S1, SS1, S2, SS2	No limit set	-	-	Permanent sampling access not required.

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method Note 1
Vents from tanks T2, T3, T5, T6 and T20 to T27	No parameters set	Storage tanks T2, T3, T5, T6 and T20 to T27	No limit set	-	-	Permanent sampling access not required.
A7 (Point A7 on Drawing No. 3821-P2-C, dated 04/2014)	No parameters set	Boiler plant (SGU – Steam Generating Unit)	No limit set	-	-	Permanent sampling access not required.
A8 (Point A8 on drawing fig 1 dated December 2014)	Particulate matter	Co-incinerator scrubber exhaust	54 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
A8 (Point A8 on drawing fig 1 dated December 2014)	Particulate matter	Co-incinerator scrubber exhaust	18 mg/m ³	daily average	Continuous measurement	BS EN 14181
A8 (Point A8 on drawing fig 1 dated December 2014)	Total Organic Carbon (TOC)	Co-incinerator scrubber exhaust	36 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
A8 (Point A8 on drawing fig 1 dated December 2014)	Total Organic Carbon (TOC)	Co-incinerator scrubber exhaust	18 mg/m ³	daily average	Continuous measurement	BS EN 14181
A8 (Point A8 on drawing fig 1 dated December 2014)	Hydrogen chloride	Co-incinerator scrubber exhaust	108 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
A8 (Point A8 on drawing fig 1 dated December 2014)	Hydrogen chloride	Co-incinerator scrubber exhaust	18 mg/m ³	daily average	Continuous measurement	BS EN 14181
A8 (Point A8 on drawing fig 1 dated December 2014)	Hydrogen fluoride	Co-incinerator scrubber exhaust	2 mg/m ³	periodic over minimum 1-hour period	Quarterly in first year. Then Bi-annual	BS ISO 15713

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method Note 1
A8 (Point A8 on drawing fig 1 dated December 2014)	Carbon monoxide	Co-incinerator scrubber exhaust	100 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
A8 (Point A8 on drawing fig 1 dated December 2014)	Carbon monoxide	Co-incinerator scrubber exhaust	50 mg/m ³	daily average	Continuous measurement	BS EN 14181
A8 (Point A8 on drawing fig 1 dated December 2014)	Sulphur dioxide	Co-incinerator scrubber exhaust	360 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
A8 (Point A8 on drawing fig 1 dated December 2014)	Sulphur dioxide	Co-incinerator scrubber exhaust	90 mg/m ³	daily average	Continuous measurement	BS EN 14181
A8 (Point A8 on drawing fig 1 dated December 2014)	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Co-incinerator scrubber exhaust	720 mg/m ³	½-hr average	Continuous measurement	BS EN 14181
A8 (Point A8 on drawing fig 1 dated December 2014)	Oxides of nitrogen (NO and NO ₂ expressed as NO ₂)	Co-incinerator scrubber exhaust	360 mg/m ³	daily average	Continuous measurement	BS EN 14181
A8 (Point A8 on drawing fig 1 dated December 2014)	Cadmium & thallium and their compounds (total)	Co-incinerator scrubber exhaust	0.05 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 14385
A8 (Point A8 on drawing fig 1 dated December 2014)	Mercury and its compounds	Co-incinerator scrubber exhaust	0.05 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 13211
A8 (Point A8 on drawing fig 1 dated December 2014)	Sb, As, Pb, Cr, Co, Cu, Mn, Ni and V and their compounds (total)	Co-incinerator scrubber exhaust	0.5 mg/m ³	periodic over minimum 30 minute, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 14385

Table S3.1 Point source emissions to air – emission limits and monitoring requirements

Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method Note 1
A8 (Point A8 on drawing fig 1 dated December 2014)	Dioxins / furans (I-TEQ)	Co-incinerator scrubber exhaust	0.1 ng/m ³	periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3
A8 (Point A8 on drawing fig 1 dated December 2014)	Dioxins / furans (WHO-TEQ Humans / Mammals)	Co-incinerator scrubber exhaust		periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3
A8 (Point A8 on drawing fig 1 dated December 2014)	Dioxins / furans (WHO-TEQ Fish)	Co-incinerator scrubber exhaust		periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3
A8 (Point A8 on drawing fig 1 dated December 2014)	Dioxins / furans (WHO-TEQ Birds)	Co-incinerator scrubber exhaust		periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948 Parts 1, 2 and 3
A8 (Point A8 on drawing fig 1 dated December 2014)	Dioxin-like PCBs (WHO-TEQ Humans / Mammals)	Co-incinerator scrubber exhaust		periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948-4
A8 (Point A8 on drawing fig 1 dated December 2014)	Dioxin-like PCBs (WHO-TEQ Fish)	Co-incinerator scrubber exhaust		periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948-4
A8 (Point A8 on drawing fig 1 dated December 2014)	Dioxin-like PCBs (WHO-TEQ Birds)	Co-incinerator scrubber exhaust		periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS EN 1948-4
A8 (Point A8 on drawing fig 1 dated December 2014)	Specific individual poly-cyclic aromatic hydrocarbons (PAHs), as specified in Schedule 6.	Co-incinerator scrubber exhaust		periodic over minimum 6 hours, maximum 8 hour period	Quarterly in first year. Then Bi-annual	BS ISO 11338 Parts 1 and 2.

Table S3.1 Point source emissions to air – emission limits and monitoring requirements						
Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method Note 1
A9 (Point A9 on drawing fig 1 dated December 2014)	No parameters set	ORU cooling tower	No limit set			
A10 (Point A10 on drawing fig 1 dated December 2014)	No parameters set	Back up carbon abatement	No limit set			
A11 (Point A10 on drawing fig 1 dated December 2014)	No parameters set	Carbon scrubber for lights bulk and waste water tanks	No limit set			
A12 Point A12 on drawing fig 1 dated December 2014)	No parameters set	Carbon scrubber for light fuel and diesel storage	No limit set			
A13 (Point A13 on drawing fig 1 dated December 2014)	No parameters set	Carbon scrubber for lube and asphalt tanks	No limit set			
A14 (Point A14 on drawing fig 1 dated December 2014)	No parameters set	Carbon scrubber for NMP storage tank	No limit set			
A15 (Point A15 on drawing fig 1 dated December 2014)	No parameters set	Carbon scrubber for Therminol dump tank	No limit set			
A16 (Point A16 on drawing fig 1 dated December 2014)	No parameters set	Carbon scrubber for second tank farm vents	No limit set			

Emission point ref. & location	Parameter	Source	Limit (incl. unit)	Reference period	Monitoring frequency	Monitoring standard or method Note 1
A17 carbon unit for new transfer station bulking / offloading area.	No parameters set	Carbon scrubber for Transfer station bulking area.	No limit set			Permanent sampling access not required.
A18 (Point A18 Generic tank layout. Drawing received 03/03/2015)	No parameters set	Dust suppression unit serving silo in transfer station.	No limit set	-	-	Permanent sampling access not required.
A19 as shown on the site plan in schedule 4 of this notice	No parameters set	Emergency flare	No limit set	-	-	-

Table S3.4 as referenced in condition 3.5.1 has been amended to add process monitoring requirements for hydro treatment and fractionation processes.

Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
A1: Scrubber T15 serving pH Adjustment Tank T4	NaOH concentration	Daily	Not applicable	-
A2: Scrubber T28 serving R1, R2 & T1	NaOH concentration	Daily	Not applicable	-
Abatement serving drum washing plant	NaOH concentration	Daily prior to treatment commencing	Not applicable	-
Location close to the Combustion Chamber inner wall or as identified and justified in Application.	Temperature (°C)	Continuous	Traceable to national standards	As agreed in writing with the Environment Agency.
A8	Exhaust gas temperature	Continuous	Traceable to national standards	As agreed in writing with the Environment Agency.
A8	Exhaust gas pressure	Continuous	Traceable to national standards	As agreed in writing with the Environment Agency.
A8	Exhaust gas oxygen content	Continuous	BS EN 15267-3 BS EN 14181	As agreed in writing with the Environment Agency.
Monitoring of aqueous flow streams to the effluent treatment plant, required to	Flow, pH and temperature	Continuous		
	Total suspended	Daily, flow		In accordance with M18

Table S3.4 Process monitoring requirements				
Emission point reference or source or description of point of measurement	Parameter	Monitoring frequency	Monitoring standard or method	Other specifications
carry out mass balance calculations to determine the emissions to sewer attributable to the Small Waste Incinerator Plant in the Oil Recovery Plant.	solids as defined by Directive 91/272/EEC	proportional representative sample over a period of 24 hours		methodology unless agreed otherwise in writing by the Environment Agency
1-Cooling water flow to effluent treatment plant	Mercury and its compounds, expressed as mercury	Monthly, flow proportional representative sample over a period of 24 hours		
2-Aqueous flow from scrubber to effluent treatment plant	Cadmium and its compounds, expressed as cadmium			
3-Condensate flow to effluent treatment plant	Thallium and its compounds, expressed as thallium			
4-Aqueous flow from oil treatment unit to effluent treatment plant	Arsenic and its compounds expressed as arsenic			
5-Aqueous flow to effluent treatment plant from exhaust scrubber on SWIP in oil recovery unit	Lead and its compounds, expressed as lead Chromium and its compounds, expressed as chromium Copper and its compounds, expressed as copper Nickel and its compounds, expressed as nickel			
Hydro treatment and fractionation processes	Temperature, Pressure, Flow	Continuous	In accordance with M20 or such other subsequent guidance as may be agreed in writing with the Environment Agency.	

Table S4.2 as referenced in condition 4.2.2 has been amended to add recovered oil sent off site for reuse.

Table S4.2 Annual production/treatment	
Parameter	Units
Total Recovered Distillate Waste Incinerated	tonnes
Recovered oil sent off site for reuse	tonnes
Electrical energy used on installation	KWhrs
Waste heat utilised by the installation	KWhrs

Table S4.3 as referenced in condition 4.2.2 has been amended to add emergency flare operation and consumption of hydrogen gas, amine solution and catalysts.

Table S4.3 Performance parameters		
Parameter	Frequency of assessment	Units
Electrical energy exported, imported and used at the installation	Quarterly	KWhrs / tonne of waste incinerated
Fuel oil consumption	Quarterly	Kgs / tonne of waste incinerated
Lime / Sodium Bicarbonate consumption	Quarterly	Kgs / tonne of waste incinerated
Water consumption	Quarterly	Kgs / tonne of waste incinerated
Periods of abnormal operation	Quarterly	No of occasions and cumulative hours for current calendar year for each line.
Operation of emergency flare	Annually	hours
Hydrogen gas consumed	Quarterly	tonnes
Amine solution consumed	Quarterly	tonnes
Catalysts consumed	Quarterly	tonnes

Schedule 3 – conditions to be added

None

Schedule 4 – amended plan

Amended plan attached

