

TABLE 1: Completed and Verified 2004 EIP Items

The 2004 EIP contained 155 items, of these 113 have been completed and verified. The closing verification comment against each of these items is provided below.

2004 EIP Item No.	2004 EIP Item Description	Comment
AF01	Recommission the selective hydrogenation unit to improve Mogas feed quality.	Progress comment: 16/06/2006 by Auditor Real time records were reviewed that showed the SHU experienced variable performance since initial re-commissioning in June 2005, but has been operating almost continuously since 19th January 2006. This EIP item is therefore verified as complete.
AF02	Develop and implement a program to monitor actual fluoride ground level concentration	Progress comment: 12/10/2006 by Auditor Ambient fluoride monitoring has been conducted at Bunnings and the Shell Club since June 2005, with the addition of Geelong Grammar in January 2006. All the results viewed apart from one were within the SEPP design criteria. A vegetation survey was conducted in 2006 following approval of the scope by EPA. As the actions required under this EIP item have been completed, this item is verified as complete.
AF03	Report on methods to improve process measurement of fluoride emissions	Progress comment: 10/02/2006 by Auditor Whilst it is not yet possible to accurately measure or calculate the fluoride emissions from the Mogas stack, the report on methods for measurement has been prepared and evidence has been provided of a planned repair to the stack during the next Mogas turnaround that should result in a sample plane that is compliant with EPA Publication 440. On-going reporting of fluoride emissions from the Mogas stack is part of the EPA licence. Therefore, for the purposes of the EIP, this action item is verified as complete.
AG01	Recommission flare gas compressors to recover waste gas (Apr-05)	Progress comment: 10/02/2006 by Auditor The evidence reviewed was consistent with Shell's report of one flare gas compressor coming on-line at the start of January 2005. The data also showed an increase in recovered flare gas consistent with the second compressor coming on-line in mid-July 2005 for 4 days, followed by regular operation of two compressors since mid-August 2005.
AG02	Report on economics of Flare flow monitoring to aid source detection	Progress comment: 10/02/2006 by Auditor The auditor found that the report had been prepared as described in the EIP action item, and that further investigation is planned in the form of a trial of Smartwatch leak detectors. Therefore this item is verified as complete. However, it is noted that the findings of the review will not be available until the outcome of the Smartwatch trial.
AG04	Further heat exchanger cleaning optimisation - Annual Progress reporting - Starts 04	Progress comment: 16/06/2006 by Auditor Critical heat exchanger instrument readings are recorded at the end of each day by the PROSS system. These records are periodically downloaded by technical staff and graphed to check performance. The process for analysis of cleaning requirements along with the energy savings for 2005 was described in a Heat Exchanger report submitted to EPA in December 2005. Adequate systems are in place for on-going annual reporting of the greenhouse gas savings. The EIP action is verified as complete.
AG05	Implement Greenhouse Action Plan	Progress comment: 10/02/2006 by Auditor For the purposes of the EIP action item, the GHG action plan has been prepared and a number of GHG reduction actions have been implemented at the refinery.
AG06	Report on alternatives to the recommissioning of the expander energy recovery device.	Progress comment: 16/06/2006 by Auditor Reports were prepared by Shell and submitted to the EPA that addressed the potential to re-instate the Turbo-expander, along with potential alternatives for energy recovery. Benchmarking against other refinery RCCU was not considered to be meaningful as operations vary at individual refineries, however the reports included a record of the Geelong RCCU energy efficiency index from 1992. Based on the reports reviewed, the EIP action item has been addressed.
AV01	Recommission RCCU gasoline splitter	Progress comment: 24/02/2005 by Shell Verification Meeting No.2 10/8/04 approved
AV02	Develop and implement an ongoing VOC monitoring program	Progress comment: 12/10/2006 by Auditor The audit found that the original EIP action item was to develop a VOC monitoring program. The long description update on 27/7/05 states that continuous monitors would be installed at two locations – it is noted this is a duplication of a requirement of Shell's EPA Licence. Continuous NATA accredited monitoring of ambient benzene and para-xylene levels is occurring at Geelong Grammar site using an OPSIS monitor. Daily 24-hour NATA accredited canister measurements of benzene are undertaken at Bunnings as approved by EPA, with 1 in 6 day monitoring at Geelong Grammar. Given that the original EIP action item was to develop a VOC monitoring program, it is considered that this has been achieved. This item is therefore verified as complete.
AV03	Update Ausplume modelling for benzene emissions	Progress comment: 12/10/2006 by Auditor The first round of EIP verification audits found that updated Ausplume modelling of benzene had been undertaken using 2004 emissions data and reported to EPA. The model input data and modelling process were found to be consistent and appropriate. During the second round of EIP audits, additional modelling was conducted by Shell of Benzene emissions in 2003 incorporating tank wake effects, for comparison against OPSIS data. This item is verified as complete.
AV05	Reallocate service of tanks 17 & 21	Progress comment: 24/02/2005 by Shell Verification Meeting No.2 10/8/04 Approved

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AV06	Recommission gasoline tank 22 as a floating roof tank	Progress comment: 10/02/2006 by Auditor Based on physical and photographic evidence reviewed, Tank 22 has been converted to a floating roof tank. This item is verified as complete.
AV07	Upgrade roof seals on tank 207	Progress comment: 31/05/2005 by Shell This item was verified as being complete at the Air working group verification meeting on the 25.5.05.
AV08	Commence conversion from fixed to floating roof on tank 23	Progress comment: 11/10/2006 by Auditor Evidence was reviewed of the refinery's plan and capital expenditure requests to convert Tank 23 to a floating roof in 2007. The requirement to convert Tank 23 is also part of EPA Licence condition 4.2. This item is therefore verified as complete.
AV09	Register vapour recovery unit stack as a licensed discharge point	Progress comment: 10/02/2006 by Auditor The November 2004 EPA Licence amendment shows the VRU listed as a discharge point for hydrocarbons (Table 1) and benzene (Table 2), and included on the plan of premises as DP27. The location of DP27 on the plan corresponds to the observed physical location of the VRU.
AV11	Design and construct benzene saturation plant	Progress comment: 16/06/2006 by Auditor Based on the physical evidence and real time operations records viewed, the Bensat plant has been operating consistently for approximately one week from early May 2006, with a feed rate to plant similar to that given in the Works Approval document. Whilst some external works were still occurring in May 2006, the Bensat plant was found to be operational and this item is verified as complete.
AV13	Predicted environmental improvement by converting Benzene to Cyclohexane in the Bensat Plant	Progress comment: 27/08/2007 by Auditor The predicted change in ground level benzene concentrations as a result of commissioning the Bensat unit has been modelled, taking into account the tank wake effects and using verifiable data based on the NPI Emissions spreadsheet for the site from 2003. The pre-and post-Bensat model predictions were plotted and showed a reduction in modelled ground level benzene concentrations. This item is therefore verified as complete.
AV16	Link offsite Cerex units to Movements Operations Panel	Progress comment: 19/12/2007 by Auditor The original EIP action item was to link the Cerex benzene monitoring unit to the Tank movements control panel. The Cerex monitor at Geelong Grammar school was replaced by a NATA-certified OPSIS method on January 2006, as required by the EPA. A high level alarm was set on the OPSIS to notify three nominated Shell environmental department personnel by SMS text message of a high benzene reading (readings taken every 5 minutes). This process has been documented, and evidence was viewed of the SMS alarms being communicated to the Refinery Shift Controller and followed-up. Although the process does not allow live data to be viewed, it achieves the same intent. This item is therefore verified as complete.
AP01	Inspect and maintain existing RCCU separation system	Progress comment: 11/10/2006 by Auditor This item was recorded by Shell as verified as complete by the community; however, documented evidence was not maintained of the verification decision. The auditor was therefore engaged to independently assess the verification status. The audit found that the RCCU separation system was shutdown for inspection in May – June 2004 with maintenance and repairs conducted on multiple items in the RCCU, therefore this EIP item is verified as complete.
AP02	Develop and implement a particulates monitoring program	Progress comment: 27/08/2007 by Auditor A number of particulate monitoring programs were commissioned by Shell, which were reviewed by GHD consultants. The initial program commenced in August 2004 for approximately 10 months using 4 Hi-Volume samplers and 1 real-time sampler. A subsequent monitoring trial using Tapered Element Oscillating Microbalance (TEOM) monitoring at three locations was undertaken in December 2005 –January 2006. A permanent TEOM monitor was set-up at Shell Bunnings monitoring station in November 2006, to meet EPA Licence requirements. A summary of the monitoring program findings was published on Shells website as "Shell Geelong Refinery Ambient Particulate MonitoringQ&A – November 2006". As a particulate monitoring program has been implemented and the results of the initial program made available on Shells website, this item is verified as complete.
AP03	Review options for improved RCCU separation system	Progress comment: 2/05/2006 by Auditor For the purposes of the EIP Action item, reports on options to reduce particulate emissions from the RCCU Stack have been prepared and submitted to the Community. Therefore this item is verified as complete.
AP05	Report on Relationship between SO2 & SO3 emissions & Opacity	Progress comment: 10/02/2006 by Auditor The opacity report submitted to the EPA and community provides a discussion on the observed effect of SO2, SO3 and particulates in the RCCU stack plume. This item is therefore verified as complete.
AS01	Commission the fuel gas sulphur analyser	Progress comment: 24/02/2005 by Shell Verification Meeting No.2 10/8/04 Approved
AS02	Recommission sulphur recovery unit number two (SRU2)	Progress comment: 24/02/2005 by Shell Verification Meeting No.2 10/8/04 Approved

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AS03	Gain NATA accreditation for off-site ambient SO2 monitors	Progress comment: 27/08/2007 by Auditor Evidence was viewed of continuous NATA accredited SO2 monitoring at Geelong Grammar by Ecotech. Evidence was also viewed of a proposal to undertake continuous NATA accredited SO2 monitoring at the Bunnings location by AWN Consultants, using Shell technicians trained by AWN to undertake weekly calibration and checks, along with regular audits by AWN to satisfy the quality requirements of their NATA accreditation of the SO2 results. The first NATA accredited monitoring report for this EIP action item was issued by AWN in December 2006 for the monitoring period June-August 2006. This item is therefore verified as complete.
AS04	Review & report on options to reduce Sox emissions from the RCCU	Progress comment: 10/02/2006 by Auditor The report issued to the EPA included a review of options to reduce SOx emissions at various processing points in the refinery, including the RCCU. As noted in the Status description, use of DeSox was selected as the most favourable option for sulphur reduction at the RCCU. The scope of this verification did not include confirming the use of DeSox at the refinery. This item is verified as complete as the report has been prepared and submitted to the EPA.
CR01	Develop a Refinery information website	Progress comment: 24/02/2005 by Shell Verification Meeting No.2 10/8/04 Approved
CR02	Develop protocol for early community notification of significant refinery incidents or events.	Progress comment: 11/10/2006 by Auditor It was found that that CR02 was not adequately covered under CR09 and was not appropriate for withdrawal as a redundant item. It was considered that EIP action CR09 required a process to be implemented for community members to report and receive information on emergencies and voice complaints, while CR02 required that a process be implemented for notification to the community of significant environmental incidents or events both proactively and reactively. A review of evidence indicated that item CR02 was appropriate for verification as complete. A formal protocol has been developed and incorporated into GRMS 4.02.01 for the notification of the community and relevant agencies of unplanned incidents and events, as well as the proactive notification of planned events if required. Evidence was viewed of previous proactive community notifications. Therefore, this item has been verified as complete.
CR03	Develop a 6 monthly community newsletter to provide information on Refinery activities	Progress comment: 11/10/2006 by Auditor The refinery has published a community newsletter on a greater than 6 monthly basis. The community attitudinal survey undertaken in July 2005 also included comments from the community on their attitudes to the newsletter. This item is verified as complete.
CR04	Conduct an attitudinal survey to better understand community concerns and queries	Progress comment: 24/02/2005 by Shell Verification Meeting No.3 12/11/04 Approved
CR05	Maintain local social investment program.	Progress comment: 10/02/2006 by Auditor The EIP Item Form was utilised effectively for the CLG and each Form was assessed, addressed (where appropriate) and filed in a centralised location within the HSSE Department. The Community Liaison Group (CLG) was disbanded in late 2005 and has been replaced by a Community Advisory Panel (CAP). This item is verified as complete.
CR06	Community input on new EIP projects	Progress comment: 10/02/2006 by Auditor The EIP Item Form was utilised effectively for the CLG and each Form was assessed, addressed (where appropriate) and filed in a centralised location within the HSSE Department. The Community Liaison Group (CLG) was disbanded in late 2005 and has been replaced by a Community Advisory Panel (CAP). This item is verified as complete.
CR07	Community Health	Progress comment: 10/02/2006 by Auditor All health initiatives as discussed in the 'long description' of the EIP action item have been identified as receiving regular funding and support from the Refinery. Community health is adequately addressed in the Social Performance Plan and the presentation given to the public in April 2005. This item is therefore verified as complete.
CR08	Workplace Safety	Progress comment: 10/02/2006 by Auditor As well as documented evidence sighted, a review through the Shell Management System also illustrated that workplace safety has been integrated into the day-to-day activities on site. Review of a sample of incident reports and follow up actions also supported this commitment. This item is therefore verified as complete.
CR09	Community Info on Emergencies	Progress comment: 16/06/2006 by Auditor A 1800 number is in place 24 hours a day for community members to report emergencies, voice complaints and receive emergency information. Community information including refinery emergencies is also communicated through quarterly newsletters. Information on emergencies that occur during regular working hours is also given to the local Pulse community radio station for broadcasting. Based on the evidence reviewed, this item is verified as complete.
CR10	Community Welcome Pack	Progress comment: 24/02/2005 by Shell Verification Meeting No.3 12/11/04 Approved

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CR11	Community education program on refinery alarms	Progress comment: 24/02/2005 by Shell Verification Meeting No.5 11/02/05 Approved
CR12	Improve Incident Notification to Shell staff	Progress comment: 10/02/2006 by Auditor Key HSSE personnel as well as External Affairs personnel are now automatically notified, via e-mail, on all incidents lodged through the Incidents and Actions Database (IAD) system. This item is therefore verified as complete.
CR13	Develop a Charter for the CLG	Progress comment: 16/06/2006 by Auditor A Code of Conduct was developed, published and distributed to the CLG at meetings in February and March 2005. The document contained a mission statement, code of conduct and expectations, disciplinary actions and meeting format. With the change in community meeting model from the CLG to the CAP, the Code of Conduct is no longer relevant and is not used. This item is verified as complete.
CR14	Shell to provide library/resource area for community members	Progress comment: 10/02/2006 by Auditor The library resource area was initially located to the right of the reception area at the Refinery Administration Building. An arrangement was later made with the Corio Library to relocate the resources centre to the library. Subsequent to the planned move to Corio Library, Shell identified that the majority of materials could be loaded onto the Shell public internet site. This would prevent items from being lost. The internet site was viewed on 17 January 2006 and found to contain copies of meeting minutes and information handed out at CLG meetings.
CR16	Conduct an Attitudinal survey in 2005	Progress comment: 16/06/2006 by Auditor An attitudinal survey was completed in July 2005 by an independent agency. The survey sought input from members of community groups through a total of six group discussions. A summary of this survey is published on the Shell Geelong Web page. The CLG desired an additional attitudinal survey be conducted during Q4 of 2005 that was developed using community input. The CLG disbanded prior to the development of the second survey. The CAP discussed the potential for a second survey and determined there would be no benefit for conducting the survey in 2005. As the CAP has taken responsibility for input to a 2006 survey, this item is verified as complete.
CR17	Review of External Communication procedures	Progress comment: 16/06/2006 by Auditor Documentation showed that a Community Correspondence Procedure was developed in conjunction with the CAP. The procedure included a review of refinery external communication processes and proposed not to undertake previously discussed automated calling and email systems for emergency situations at the Refinery. This was presented to the CAP for discussion and was subsequently approved. The document also outlines a process in which community members can raise an issue with the CAP, and a protocol for response to community concerns. This item is verified as complete.
WC01	Replace buried cooling water mains to improve reliability.	Progress comment: 10/02/2006 by Auditor Documentary evidence of the cooling water replacement project was reviewed and new above-ground pipelines were observed throughout the site in December 2005. Based on the evidence reviewed, this item is verified as complete.
WC02	Modify TA outfall to discharge seaweed effluent only	Progress comment: 16/06/2006 by Auditor Based on the documentation reviewed and visual observation of above-ground modifications at the TA outfall, works have been completed to redirect the identified streams contributing to visible oil and chlorine breaches at the TA outfall. This item is verified as complete.
WC03	Upgrade cooling water interceptor skimmers to improve free oil recovery	Progress comment: 16/06/2006 by Auditor Based on the documentation reviewed and visual observation that the proposed changes and upgrades to the skimmers at MOC 2 and MOC6 were completed, this item is verified as complete.
WC04	Install oil-on-water detection at cooling water oil catcher to provide early detection of surface oil	Progress comment: 10/02/2006 by Auditor Oil-on-water detectors were observed at MOCs 2, 6 and 9 with a real-time signal feed back to the operations staff. Lighting has also been installed at the Main Oil Catchers. This item is therefore verified as complete.
WC05	Install CPI or equivalent to separate oil from cooling water oil catcher skimmings.	Progress comment: 10/02/2006 by Auditor It was advised that, following review by Refinery personnel, installation of Corrugated Plate Interceptors (CPIs), or segregated tankage was not considered necessary or desirable. Procedural and operational changes have been implemented, including decanting oily pit water prior to disposal to DAF1 or sewer, that were effective in reducing the TDS concentration in Refinery Trade Waste discharges to Barwon Water. Data reviewed showed that the TDS in the Trade Waste has been below the Barwon Water Limit of 4000 mg/L for all of 2005, which is an improvement on 2003-2004 data. Based on the evidence reviewed, this item is verified as complete.

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WC06	Design all future Refinery units and heat exchanger upgrades for the future open recirculating cooling water System(s)	Progress comment: 10/02/2006 by Auditor Considerations for the future installation and retrofitting of existing plant to a recirculating system have been incorporated into plant design in the PFC form. Specifications in the Bensat plant for the cooling system illustrate that the water pressure requirements within the cooling pipe network were substantially increased for this project, consistent with a potential future conversion to a recirculating cooling system. This item is therefore verified as complete.
WC07	Feasibility Study for Closed Cooling Water to facilitate getting Shell "out of the bay"	Progress comment: 16/06/2006 by Auditor A consultants report into the options for and feasibility of replacing the existing sea water cooling system with a recirculating cooling tower system was issued in December 2005. This item is therefore verified as complete.
WC08	Cooling Water intake fish entrainment.	Progress comment: 16/06/2006 by Auditor Evidence of review of a number of screening and diversion options to prevent fish entrainment in the cooling water intake was sighted, however none of these were found to be workable based on the particular constraints at the Refinery. The option of a sonic fish repellent was identified as a potential solution, however access to commercially available equipment may be several years off. On the basis of the evidence reviewed, a reasonable effort has been made to find a solution to the fish entrainment. This item is therefore verified as complete.
ER02	Install rapid deployment oil spill containment booms on the Jetty	Progress comment: 10/02/2006 by Auditor Three oil spill booms were observed to be installed at the Jetty, one at Berths 1 & 2 and two at Berths 3 & 4. Photographs of boom deployment at Berths 1 & 2 were sighted demonstrating containment of the Berth. This item is verified as complete.
ER03	Conduct emergency response training and exercises	Progress comment: 24/02/2005 by Shell Verification Meeting No.3 12/11/04 Approved
ER05	Storm Preparedness	Progress comment: 16/06/2006 by Auditor A Storm Preparedness Procedure (GROP 99.16) was developed through the involvement of the five Shift Controllers, who met to discuss current storm preparedness practices. These actions were formalized into the Storm Preparedness Procedure. The procedure outlines steps to be taken prior to storm events to prevent or reduce the chance of hydrocarbons being carried offsite due to stormwater discharges. Based on the evidence reviewed, this item is verified as complete.
J04	Use the removed sections of the demolished pipe as test pieces to validate the test methods for the remaining pipe.	Progress comment: 24/02/2005 by Shell Verification Meeting No.3 12/11/04 Approved
J05	Update procedures to add defaults to the Inspection Report management system.	Progress comment: 10/02/2006 by Auditor Evidence was sighted confirming that equipment inspection intervals are established based on an assessment of risk, and that the inspection intervals have been set-up in the refinery systems to automatically generate the next inspection date. This item is therefore verified as complete.
J06	In the new EMPRV system, keep all electronic inspection reports under the Tag number.	Progress comment: 24/02/2005 by Shell Verification Meeting No.5 11/02/05 Approved
J07	Review paint preparation methods for suitability over water.	Progress comment: 24/02/2005 by Shell Verification Meeting No.3 12/11/04 Approved
J08	Inspection should be mandatory signatories on all Proposals for Change.	Progress comment: 10/02/2006 by Auditor The senior engineer in charge of raising and following through the PFC process is responsible for identifying whether there is a change in corrosion potential, and therefore whether sign-off by the Inspection Department is needed. The PFC form requires mandatory signatures from the Area Project Manager, Area Representative and Technical/Operations/Engineering Manager. This item is verified as complete.
J09	Special inspection regime for Jetty slops system.	Progress comment: 10/02/2006 by Auditor A specific inspection regime for the jetty slops system has been developed and implemented into the EMPRV (sighted). Consideration of further upgrades to the jetty slops system has been undertaken and Shell Geelong has commenced preliminary works beneath Berths 1 and 2 to upgrade the existing slops system with new pipe work and tanks.
J1	The Jetty Hazard Analysis should include Ship Strike.	Progress comment: 27/08/2007 by Auditor The hazard analysis for marine operations (GRHA 16) was updated in June 2006 and identified various hazards including vessels striking the cargo handling platform during berthing operations. The potential hazard event relating to this was identified as damage to the cargo handling platform and cargo transfer equipment and the resulting loss of containment. The GRHA identified specific preventative-control measures for potential hazard events. For the scenario of a ship strike occurring and resulting in loss of containment, the resultant risk evaluation was recorded to be "as low as reasonably possible" (ALARP) This item is verified as complete.
J13	Determine appropriate treatment for the jetty slops line.	Progress comment: 24/02/2005 by Shell Verification Meeting No.5 11/02/05 Approved

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J2	Better access beneath the Jetty Berths needs to be installed to allow for inspection by the Jetty Inspector and for coating inspection/repair.	Progress comment: 27/08/2007 by Auditor Permanent access platforms under jetty berths 1 & 2 were observed to have been installed during a site inspection in November 2006. Temporary scaffolding was observed to still be used under the pipelines running along the roadway approach to the berths. However, permanent walkways were available at most of the valves in the roadway area (except the steam line), and a mobile walkway was also available for access to the pipelines from above. This EIP item is therefore verified as complete.
MS01	Implement improvements to annual EPA report	Progress comment: 24/02/2005 by Shell Verification Meeting No.2 10/08/04
MS02	Undertake a cleaner production study into Refinery operations.	Progress comment: 10/02/2006 by Auditor The Cleaner Production Study report was reviewed. Although Phase 2 will not be commencing, Shell Geelong has satisfied this EIP action by commissioning the independent Phase 1 Study, and subsequent submission of the report to the EPA.
MS03	Document product return procedures	Progress comment: 10/02/2006 by Auditor The product slops return procedure GROD 98DI.07 addresses the necessary scope of product returns and was loaded onto the Geelong Refinery Management System in December 2005. This item is therefore verified as complete.
MS04	Review contractor environmental standards	Progress comment: 10/02/2006 by Auditor Shell advised that a specific report was not prepared for this EIP action item (as noted in the Long Description), and that it would rely on the GHD audit report and Contractor Management System (CMS) as evidence. Section 5.8 of the GHD Audit Report discusses the assessment undertaken by GHD on employee and contractor environmental competency levels. The associated recommendations have been incorporated into the Shell Incident and Action Database. Other evidence sighted confirms the use of the CMS for ongoing contractor environmental assessment at the refinery.
MS05	Carry out enhanced environmental training	Progress comment: 16/07/2006 by Auditor Prior to March 2006, Shell advised that the majority of environmental training referred to in this EIP action item was conducted informally and records of actual dates and attendance were not generally kept. It was therefore not possible to assess the extent of participation of employees and contractors in the enhanced environmental training prior to this date. Based on the records of training attendance collected since March 2006, it is evident that regular environmental awareness training has been conducted at the Refinery, and that a process of record keeping has been implemented. This item is verified as complete.
MS06	Review audit guidelines to ensure focus on areas of greatest potential environmental impact.	Progress comment: 10/02/2006 by Auditor The report on review of audit guidelines was sighted. Shell Geelong has reviewed its internal audit schedule in conjunction with its significant environmental aspects, however a greater emphasis on the significant environmental aspects needs to be developed and incorporated into the Refinery Management System. For the purposes of this EIP action item, however, the review of the audit guidelines has been undertaken.
MS07	Develop a Document to record Additions and Modifications to the EIP	Progress comment: 25/01/2005 by Shell The EIP Addition / Amendment form has been workshopped at an EIP meeting and a working copy prepared. It had its first application in the course of the December EIP 2005 meeting.
MS09	The EMS should be structured to accentuate Line Management Responsibility & Accountability for Environmental Performance.	Progress comment: 10/02/2006 by Auditor There are several mechanisms in place at Shell Geelong to manage, determine and direct line management responsibility as well as accountability for environmental performance. Regular reporting and review mechanisms are also in place through the various review committees and management teams.
MS10	Management of Change from External Sources	Progress comment: 10/02/2006 by Auditor Numerous mechanisms were observed to be in place which address change management from external sources. The identified forums and systems adequately address the need for Shell Geelong to manage external changes or issues as and when they occur.
MS11	Conferring with Auditors before finalising any EIP item arising from statutory audits.	Progress comment: 10/02/2006 by Auditor URS was commissioned by Shell Geelong to independently verify recently completed EIP items. This Report provides the objective evidence to support this exercise. The auditor requested formal written notification from Shell to the EPA of this new process to fully close the action item. A letter was sent to EPA on 7th February 2006, therefore this item is now verified as complete.
AN02	Report on Best Practice to achieve Furnace NOx emission reduction program and the opportunity to reduce NOx emissions from other parts of the refinery	Progress comment: 10/02/2006 by Auditor The report on NOx emissions includes a summary of options to reduce NOx emissions along with a draft timing plan for replacement of existing burners with low-NOx burners, based on planned turnaround dates. As the report on NOx emission reduction options has been submitted this item is verified as complete.

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N01	Conduct off-site noise survey to assess noise levels against SEPP N-1	Progress comment: 16/06/2006 by Auditor A Noise Impact Assessment was undertaken by Bassett Acoustics based on monitoring conducted in July-August 2005 and October 2005, in accordance to SEPP N-1. The assessment indicated that the effective noise levels from the refinery exceed the night-time limits at Geelong Grammar School, Camellia Crescent, and the Lowe Street Residence locations. A summary of this report was uploaded on Shells website on 23 December 2005, which reported the noise exceedances. An internal Noise Action Plan has been developed, and compliance with the SEPP has been incorporated into the Shell Environment Team business objectives. Given that the SEPP N1 assessment has been undertaken, a noise action plan developed and a process put in place to work through the action plan items, this EIP item is verified as complete.
N02	No increase to measurable noise levels as a result of the Bensat Project	Progress comment: 27/08/2007 by Auditor Based on the evidence reviewed, the noise levels at 3 selected monitoring locations showed no significant increase in noise levels associated with the operation of the Bensat plant. Measured increases of 1-2 dB(A) were detected at 2 of the 3 locations, however the report found that these were not significant over the distances being considered. Noise from the Bensat unit was not detected at any of the monitoring locations during the 2006 survey. Given that the noise assessment report generally found no measurable noise increase as a result of the Bensat operation, this EIP item is verified as complete.
O01	Develop improved odour detection protocol	Progress comment: 24/01/2005 by Shell Verification Meeting No.5 11/02/05 Approved
O02	Conduct Refinery odour modelling	Progress comment: 10/02/2006 by Auditor Odour monitoring and modelling was found to have been conducted in accordance with the appropriate Australian Standards and Ausplume methods, with reports provided to the EPA.
O03	Conduct annual odour audit involving community members	Progress comment: 24/02/2005 by Shell Verification Meeting No.3 12/11/04 Approved
O04	Purchase an "electronic nose" to help detect and characterise odours	Progress comment: 12/10/2006 by Auditor A report considering options for electronic noses was prepared, which concluded that use of calibrated noses was preferred, in order to meet sensitivity requirements. The Refinery had a number of its staff noses tested in 2005 and 2006, and each shift has at least one calibrated nose as of April 2006. Use of calibrated noses is documented in Refinery operating procedure GROU 00:15. Whilst an electronic nose was not purchased, a suitable alternative was identified and has been implemented. Based on the evidence reviewed, this item is therefore verified as complete.
O05	Develop a proposal for a community odour panel.	Progress comment: 12/10/2006 by Auditor A proposal has been developed to establish a community odour panel. The proposal suggests that volunteers from neighbouring businesses and community centres be selected and assessed on an annual basis to serve on the community odour panel. Panel members would be invited to attend quarterly Refinery odour audits. A number of community members noses were screened during a testing program at the Refinery in April, 2006. Whilst the community odour panel is in its early days, the proposal has been prepared and calibration of community members noses has commenced. This item is therefore verified as complete.
O06	Install DAF2 oxidation unit to destroy odorous compounds.	Progress comment: 10/02/2006 by Auditor The thermal oxidiser unit has been installed and was observed to be operating during the audit site inspection. Continuous monitoring of the unit operation is not undertaken, therefore it was not possible to inspect historical records.
O07	Flare water-seal vessel excess water redirection to sewer	Progress comment: 24/02/2005 by Shell Verification Meeting No.2 10/08/04 Approved
O08	Classify potentially odour generating compounds in Refinery compost	Progress comment: 24/02/2005 by Shell Verification Meeting No.2 10/08/04 Approved
O09	Redirect high sulphide slops out of tank 251	Progress comment: 08/02/2006 by Auditor It was advised that the majority of the offensive odours were generated during initial Hydrex plant slops deposition into T251. The LOP plant is now closed and slops are no longer generated. Complaints relating to T251 have ceased. Therefore, as the source of these odours is no longer present, this item is verified as complete and is now redundant.
O11	Signage for odour reporting on foreshore.	Progress comment: 16/06/2006 by Auditor An inspection of the perimeter fencing and the main entrance to the Refinery showed that signage, containing contact telephone numbers for the EPA and Refinery, had been erected. This item is therefore verified as complete.
O12	Four odour audits be conducted in 2005	Progress comment: 16/06/2006 by Auditor Records were viewed of four odour audits conducted in 2005. The results of the audits were reported to the EPA in the Shell Annual Environmental Performance Report. This item is verified as complete.

TABLE 1: Completed and Verified 2004 EIP Items

The 2004 EIP contained 155 items, of these 113 have been completed and verified. The closing verification comment against each of these items is provided below.

2004 EIP Item No.	2004 EIP Item Description	Comment
O13	Testing of Community noses.	Progress comment: 16/06/2006 by Auditor Letters were sent out to Refinery neighbours and CAP members requesting recommendations of community members for involvement in odour testing. Five community members were nominated and invited to take part in Odour Screening on 28 April and 29 April 2006. Whilst the actions taken for this EIP item do not exactly meet the long description – invitations went out to 5 rather than 6 community members, and testing was conducted in 2006 rather than 2005, there is evidence of an open invitation to community members to put themselves forward for testing. This item is therefore verified as complete
o14	Audit Odour Detection Protocol	Progress comment: 16/06/2006 by Auditor An audit of the odour protocol's implementation was conducted in February 2006. The audit identified improvements needed to the awareness of and use of calibrated noses on site in accordance with the Odour Detection Protocol, and made recommendations to close the gap. Based on the evidence reviewed, this item is verified as complete.
WP01	Redirect mis-segregated process water and tank drainings from the runoff system to Refinery slops	Progress comment: 16/06/2006 by Auditor Documentation was reviewed indicating that each project listed in the EIP action item description had been completed. Visual observation confirmed that the pre-existing drainage pathway had been modified and a new drainage pathway had been constructed. Based on the evidence reviewed, this item is verified as complete.
WP02	Upgrade dissolved air flotation unit 2 (DAF2) to improve reliability	Progress comment: 16/06/2006 by Auditor Based on the evidence observed, upgrades to the instrumentation at DAF2 have been installed and are operating and monitored via the Refinery Distributed Control System. Pump reliability was found to be markedly improved following inspection by the pump manufacturer and replacement of a previously failed part. Two pump spares have been made available, minimising DAF2 down time in the event of a pump failure. This item is verified as complete.
WS01	Provide segregated tankage for the storage of salt process water to enable independent treatment.	Progress comment: 19/12/2007 by Auditor Documentary evidence and physical inspection of the crude tanks lines and oil catchers indicated that a system for collection and treatment of salt process water, separate from the runoff water system, had been installed. This item is verified as complete.
WS02	Install a separation system for the removal of free oil from salt process water	Progress comment: 19/12/2007 by Auditor The drawings and physical inspection of plant showed that a new IAF/MMF/GAC oil removal system had been installed for salt water treatment, downstream of the existing plate pack oil separation system (CPI) in POC20. The new system is a superior form of treatment compared to a CPI. Given that an existing plate separation system is used for first stage treatment of the salt process water, followed by further oil removal in a new IAF treatment system, this item is verified as complete.
WS03	Conduct pilot scale activated carbon treatment study for removal of dissolved contaminants from salt process water	Progress comment: 19/12/2007 by Auditor Based on the evidence reviewed, an activated carbon (GAC) unit has been installed as the last step in treatment of salt process water. As of October 2007, the overall Salt Process Water Treatment Plant and process was undergoing adjustment to account for sulphide issues in the feed. The GAC units have operated during this time, showing a variable but positive removal of TOC; however it is noted this is without full operation of the IAF chemical dosing stage. Shell has undertaken to continue fine tuning the treatment process and develop a procedure for breakthrough testing and change-out of the GAC. This item is therefore verified as complete.
GW02	Conduct improved spills awareness training for staff and contractors	Progress comment: 16/06/2006 by Auditor Evidence was provided of a number of environmental training materials including a spill awareness powerpoint presentation. Shell advised that the majority of the environmental training was conducted at toolbox meetings or during monthly "7 hour day" training days. Whilst evidence of individual training attendance to the 2005 emergency response training was not kept, the email trail viewed was adequate to show that the training was planned. Individual records of attendance at Oil Spill training in 2006 were viewed. An improvement identified during the first verification audit was that records of all environmental training delivered should be maintained as part of the site's EMS. Based on the evidence reviewed, this process is now in place. This item is verified as complete.
GW04	Review tank construction standards	Progress comment: 10/02/2006 by Auditor The new standard of retrofitting HDPE liners to jacked tanks has been adopted based on the evidence observed, and incorporated into the Refinery's asset procedure for Tank Inspection. This item is therefore verified as complete.
GW06	Improve current on-site periodic recovery program for phase separated hydrocarbons	Progress comment: 10/02/2006 by Auditor Shell advised that the extraction method being used was a Collex vacuum truck. The use of the truck reportedly stemmed from a condition of a previous Clean-Up Notice. The Clean-up Notice issued in October 2004 does not include a requirement to undertake vacuum-extraction of free phase from wells. Based on the evidence reviewed, the EIP action item is verified as complete.

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GW08	Conduct active off-site pump and treat remediation trial	Progress comment: 10/02/2006 by Auditor A report by Handex was sighted that summarises the trial of a batch groundwater pump and treat system that was operated in 5 wells in the foreshore area during 2004. The report recommended changing to a continuously operated system. A new continuous pump and treat system has been designed that discharges the extracted groundwater to the refinery slops system. Commissioning was due to commence in mid December 2005. As the original trial has been completed and a revised system designed, this item is verified as complete.
GW11	Continue to conduct twice yearly groundwater monitoring events	Progress comment: 10/02/2006 by Auditor Evidence was reviewed supporting the groundwater monitoring and gauging events, although one six-monthly monitoring round was missed due to issues with obtaining NATA accreditation for Shells PSH fingerprinting analysis. However, two full gauging rounds were conducted in this time. A draft revised GWMP was observed in January 2006, along with follow-up comments clarifying the scope of monitoring between IT Environmental and the Auditor (GHD). The revised GWMP included analytes, well selection and sampling frequency. Based on the evidence reviewed, the revised GWMP is close to receiving final approval from the Auditor. This item is therefore verified as complete.
GW13	An additional set of at least 3 monitoring wells is to be installed before the GW12 intervention trench is built.	Progress comment: 10/02/2006 by Auditor Based on the evidence provided, four monitoring wells were installed down-gradient of the WAG receiving station during the first half of 2005. No phase separated hydrocarbon (PSH) was recorded during the August 2005 monitoring event. This item is verified as complete.
GW14	Update PSH Map	Progress comment: 12/02/2006 by Auditor From the evidence reviewed, it was found that the phase separated hydrocarbon (PSH) plume data has been updated following a comprehensive gauging round and this information was supplied to the community at a meeting on 17th June 2005. This item is therefore verified as complete.
GW15	Gauging episode timing to be NST 28 days after extraction - THIS SHOULD BE 7 DAYS AS PER STDS AND GUIDELINES.	Progress comment: 10/02/2006 by Auditor It is not considered practical to set a standard minimum time for well recovery prior to gauging water and free product levels. The time required varies depending on the purpose of the measurement and the individual well and surrounding aquifer properties. Further discussions with Shell and review of evidence for other EIP items indicate that this action item is no longer relevant. Direct extraction from monitoring wells is no longer routinely practised at the site and dedicated extraction wells have been installed. This item is therefore verified as complete as it is no longer relevant.
GW17	PSH collection sump management and maintenance	Progress comment: 10/02/2006 by Auditor Based on the emails and records provided, Collex undertakes cleaning of the 3 trench collection sumps at Shell. Records provided by Collex and Shell indicate that cleaning was undertaken approximately quarterly between March 2004 and November 2005. This item is verified as complete.
GW18	Reassessment of monitoring wells located between Terminals and the refinery's southern boundary and on the Terminals Site.	Progress comment: 10/02/2006 by Auditor Documentary evidence was reviewed supporting the installation in 2005 of at least 8 new monitoring wells of 50mm diameter either side of Wharf Road between the Refinery and Terminals sites. At least 4 additional monitoring wells were installed at intervals along the south part of Shell Parade, up to the salt water intake. The decommissioning of the geoprobe wells was not physically confirmed during the audit, however it is considered that for the purposes of the EIP, this action item is completed by the installation of the new wells.
GW19	Presentation by HLA to EIP Group	Progress comment: 10/02/2006 by Auditor The minutes of the 17 June 2005 community meeting indicate that a detailed presentation on the soil and groundwater investigations at the site was made by IT Environmental and discussed with the community. This item is verified as complete.
WM03	Review the Refinery waste reduction action plan to determine further improvements.	Progress comment: 27/08/2007 by Auditor The evidence reviewed indicated that an assessment of the status of waste prevention and recycling at the refinery was undertaken, and a prioritised list of wastes identified with specific actions in an updated WRAP issued in 2006. It is noted that the previous WRAP action for prevention or reuse of waste RCCU catalyst was not completed prior to release of the updated plan, and has been incorporated into the revised WRAP. This item is verified as complete.
WR01	Segregate runoff water out of cooling water drainage system (Commenced in WMP, Jun-04)	Progress comment: 19/12/2007 by Auditor A review of drawings, cross referenced with the Operating Narrative for this project and visual inspection of above-ground drainage works, showed that all of the nominated POCs and Field Sumps in this EIP action item have been modified, along with run-off water from the majority of plant areas nominated as requiring assessment. Shell advised that the areas around Plat3, CDU4, HDS2 HDS and SRUs were assessed as either not needing drainage works or would be addressed by other projects. This item is verified as complete.

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WR04	Install a buffer tank (T7) to help accommodate Refinery runoff water during storms for treatment in DAF 1 (Commenced in WMP, Jun-04)	Progress comment: 10/02/2006 by Auditor Whilst there is evidence that tank (T7) has been converted through the installation of an inlet-riser and floating suction unit, the tank is currently not being used as a buffer tank for 'first flush' run-off water. The installation of piping work to divert water run-off from the Controlled Discharge Facilities to Tank 7 still needs to be constructed. This is a separate EIP action item (WR06). It is suggested that the description is reworded from 'install' a buffer tank, to 'convert existing tank (T7)'. Given that installation of the necessary pipework is part of a separate EIP action item, this action item is verified as complete.
WR05	Modify runoff water oil catchers to 'controlled discharge facilities' to capture the initial runoff water during storms.	Progress comment: 19/12/2007 by Auditor Physical inspection and review of design calculations and drawings showed that the run-off water capture system had been changed to direct the first flush of rainfall along with dry-weather flows to the DAF-1 treatment facility prior to discharge to the bay. Review of Water Master Plan project status indicated that the pumping systems connecting the controlled discharge facilities (CDFs) to Tank 7 were completed and handed over to operations between April and June 2007. The CDFs were viewed in July 2007 and observed to be complete apart from some minor post-commissioning works. This item is verified as complete.
WR06	Install facilities to transfer runoff water for central flow buffering and treatment at DAF1	Progress comment: 19/12/2007 by Auditor Documentary and physical evidence was viewed of the modification of Tank 7 to receive dry weather and storm run-off flows from CDFs 1, 3, 7 and 10 and associated Dry Weather Flow channels (previously known as MOC 1,3,4,5,7 & 10). The water collected in Tank 7 is allowed to separate, oil is skimmed off and the water portion pumped to DAF1 for further treatment. DAF1 discharges to the bay via the MOC 6 outlet race. This item is verified as complete.
WR09	Reduce water consumption and runoff through improved condensate recovery	Progress comment: 19/12/2007 by Auditor Physical inspection and review of project documentation and drawings confirmed that a new condensate recovery system had been installed for CDU4/Plat3. This project had the largest identified potential condensate saving. It was not possible to physically verify the effect on condensate from Plat 2. No other works were put forward by Shell for verification under this item. Payback periods for other identified areas of condensate loss indicated that these were not favourable options at the time. This item is verified as complete.
WR10	Upgrade DAF1 equipment to improve runoff water quality	Progress comment: 19/12/2007 by Auditor Overall, the evidence reviewed shows that the DAF-1 facility has been upgraded. However, the chemical dosing system pumps were potentially over-sized, and under the current operational set-up and available flow data, the upgrade has not resulted in improved performance of the DAF-1 unit. Subsequent to the DAF1 upgrade, Shell has committed to further review the operation and chemical dosing at the DAF-1 to improve the performance of the system and ensure consistent and reliable oil removal under both high and low flow conditions. The driver for this on-going commitment is compliance with EPA licence condition 14.3. Given that the DAF1 upgrade was completed, and Shell has committed to further review and improve the system performance, this item is verified as complete.
WR11	Install oil sump high level alarms and upgrade non return valves	Progress comment: 19/12/2007 by Auditor Based on the physical and documentary evidence reviewed, Shell has undertaken a review and consolidation of its oil catchers and field sumps, including the requirement for upgrade of NRVs and HLAs. The majority of items inspected had been upgraded or were under construction. High level alarms were linked back to control panels. Of the MOCs and Field Sumps inspected as part of the action verification, new non-return valves were observed on all relevant pump lines. New high level alarms were viewed on MOC2 and FS5. FS3 had an older-style alarm. This item is verified as complete.